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MAY, 1852.

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ORIGINAL COMMUNICATIONS.

ART. III.—*A case of Cystitis accompanied by Gangrene of the Lower Extremities.* By HENRY MELVILLE, M. D., TORONTO.

THE following report of a remarkable, and I believe unique, case is defective in many particulars, arising from the impossibility of obtaining an accurate medical history of its commencement and progress up to the period at which I first saw the patient; but such as it is I offer it to the profession as a contribution to pathological science, not altogether devoid of interest and importance.

J. G——, aged 38 years, was a native of Yorkshire, England; he emigrated to Canada when he was 8 years of age and had resided in both Provinces since; had been married 7 years and had two children, one of whom survives—a boy exhibiting the scrofulous diathesis strongly marked, which he does not apparently derive from his mother who seems to be a healthy person; he is represented to have been a stout, plethoric and active man, of a sanguine temperament and lively disposition, enjoying uniformly good health, until within the last three years; of good habits, living generously and rarely exceeding either in food or drink. His occupations have been various; for sometime past he was employed as salesman and general porter in an extensive dry goods store in this City.

About three years ago he was engaged one day lifting a stove in company with another man, while in the act of taking it down a flight of steps, his companion who was below the stove, from some cause relaxed his hold, and the whole weight was thus thrown upon him to sustain; in the exertion required to effect this he felt something

snap in the left groin, and subsequently observed a swelling, which occasioned him much pain and discomfort at the time; the inconvenience attending its presence wore off after some months, although the swelling never entirely disappeared. During this period he had frequently suffered from occasional discharges of purulent matter from the urethra, which were generally preceded by an enlargement and followed by a subsidence of the swelling, with a sense of relief of distress. He also experienced occasionally a sense of irritation about the neck of the bladder with difficulty of micturition, but not to such an extent as to occasion any suspicion of stricture of the urethra. During the early part of the past winter he complained frequently of cramps in the lower extremities, affecting principally the muscles of the left leg, and felt frequently very chilly with alternate "flashes of heat." He was also observed to become more irritable in his temper, and was the subject of occasional fits of waywardness and despondency; expressing himself as feeling wearied and less able to endure fatigue or exertion. His bowels were usually constipated and the small size of the fœces were the subject of remark to himself and wife. His appetite was capricious and he became rather more unsteady in his habits, drinking Gin with the assertion that it relieved much of his uneasiness. In the early part of March last his occupation required him to be much on his feet, standing frequently the whole day long. On the evening of the 12th he had indulged somewhat freely in company with some friends, but retired to rest at his usual hour without any additional complaint or suffering. On the morning of the 13th he rose at his usual time and dressed himself, but in stooping to pull on his boot he was seized with violent pain in the left foot, it was so intense as to render him quite faint, he staggered to a seat, and after a time was restored to consciousness by the use of stimulants. On attempting to walk however, supported by attendants, it was discovered that he had lost the use of his left leg, it was also observed that the toes and foot had become colourless, and that the extensor tendons were very rigid. Under the impression that he was suffering from an attack of rheumatism, warm and stimulant applications were applied, with some degree of relief of the pain and restoration of heat of the part. On the 14th a red spot was observed on the dorsum of the foot, the toes "withered away" and the foot and leg became gangrenous. After a few days the right foot also put on a gangrenous appearance—he suffered from occasional paroxysms of pain in both extremities—there was partial retention of urine, but he would occasionally void it in considerable quantities. Such is the history of the case I have been able to trace from the account given by his wife and other attendants; many of the particulars however not having been revealed until after his death.

On Sunday the 4th of April, I saw him for the first time. He was in the semi-erect posture in bed supported by pillows, with the body inclined to the left side, resting principally upon the left hip. His countenance extremely pale and expressive of great anxiety and distress, the latter being further evinced by groaning and sighing.

His face and hands were bathed in a profuse perspiration, he suffered from great restlessness and want of sleep, with much pain in the left thigh and right foot. His pulse was quick, small and thready, his tongue dry and brown, and his general sufferings were aggravated by excessive thirst. The left leg was lying on the outer side bent at the knee, the thigh being also flexed on the body. The toes and foot presented all the characters of dry gangrene, and the gangrenous inflammation extended to the upper third of the leg posteriorly and nearly as high as the head of the tibia anteriorly—there was a faint attempt at the formation of an irregular line of separation; below this line the limb was cold and spongy—the foot and toes being hard and dry .The thigh was very œdematous and there was an inflammatory blush extending above the popliteal space to the lower third of the thigh posteriorly. I thought I could detect a faint pulsation in the upper part of the femoral artery, but from the great œdema, this was difficult to ascertain. The right leg was placed on the inner side, was also œdematous and was in a flexed position. The gangrene of the right foot was confined principally to the under part of the toes, the sole of the foot, internal malleolus and heel, the inflammation extending as high as the middle of the leg. I ordered warm spirit lotion to this foot and a yeast poultice to the left leg. I also advised the free use of wine or porter and nourishing broths. I prescribed a mixture containing the liquor ammon : acetatis, carbonate of ammonia and camphor mixture; with five grain doses of quinine. The proguosis given to the family at his request was of course of the most unfavorable character. I confess that I was entirely at a loss to account for this extensive destruction of vitality. As on investigation I could discover no adequate exciting cause. Attributing it in the first instance to the effect of cold and exposure, I was assured that he had not been in any way subjected to their influence, as he always wore ample and warm covering to his feet and limbs. I was told that he had not been indulging to any great extent, except on the evening preceding his attack, and that then he had only taken more freely of his customary drink, but not to such an extent as to render him intoxicated. That his food had been of the best description and indeed somewhat choice for a person in his circumstances.

On the following day I expressed a desire to have a second opinion on the case and with the sanction of the family I requested my friend Dr. Hodder to visit the patient with me.

On a careful examination at this consultation, we ascertained that there was really no pulsation in either femoral artery and detected the existence of a tumour in the left illiac region, filling completely the left pelvic fossa and extending as far as the median line and as nearly as high as the umbilicus; we could trace its outline distinctly, it conveyed an indistinct sensation of fluctuation, was apparently moveable, was resilient, dull on percussion, and did not exhibit any indications of pulsation; the surface was uniform and there was no tenderness on compression. Subsequent enquiry elicited the fact that on the morning of his attack he was conscious of "something having

given way" and that then he had first discovered the encreased size of the swelling in the groin.

The diagnosis was most obscure. Several of my professional friends visited the case and various opinions were formed as to the nature of this tumour. Its existence at once solved the mystery of the gangrene, and confirmed the prognosis. My own impression was that an aneurism had originally existed, the coats of which had given way and the contents become diffused and coagulated. Another thought it was a sarcomatous growth, the opinion as to its malignant nature being certainly countenanced by the general appearance and complexion of the patient, which would have indicated the cancerous diathesis under other circumstances. A third regarded it as an encysted tumour and a fourth suggested the idea of abcess. Influenced by these varied views of the case and desirous of establishing the diagnosis, in order that if practicable an attempt should be made to restore the circulation, by preventing the pressure occasioned by this tumour, either by its removal or the evacuation of its contents, it was contemplated to puncture with an exploring needle; even at the hazard, had it proved to be an aneurism, of the necessity of ligation of the common illiac or even the aorta, an extreme measure which the desperate condition of the patient might have justified. The rapid sinking of the patient however on the day when it was resolved to make the experiment, prevented the proceeding—a circumstance which subsequent revelation proved to have been very fortunate as regards what might probably have been the issue of it. One circumstance is worthy of remark, that during the period I attended him, there was no clue given to lead to a suspicion of the bladder being implicated, for although he complained occasionally of retention of urine, this was by no means urgent, and he was as frequently relieved by warm diluents, voiding considerable quantities of urine several times; and it was attributed to the constitutional irritation produced by the prominent disease. It is unnecessary to trace the progress of the case to its fatal termination—the symptoms being such as usually attend extensive destruction of the tissues—He died on the 18th of April, fourteen days after I had first seen him and fifty days from the commencement of the attack. The tumour had increased in size extending over to the right side and filling the cavity of the pelvis completely, rising at the same time as high as the umbilicus.* I could not obtain permission to examine the body while in the house, but the opportunity was afforded of doing so in the vault of the cemetery. The inconvenience of conducting the post mortem under these circumstances prevented as full an examination as could be desired, and we were not permitted to open the head. On making the usual incisions for exposing the contents of the abdomen, the intestines presented a healthy appearance, but were pushed upwards by a tumour filling the entire pelvis and lower part of the abdominal cavity. Its contents were now readily perceived to be fluid, and it was discovered to be an enormously enlarged bladder distended

* The constant position of the patient on his left side, will account for this mode of extension, as will be evident from the cadaveric disclosures.

with urine. It was firmly attached to the brim of the pelvis by strong adhesions of cellular tissue, binding down the aorta at its bifurcation and the upper portion of the rectum against the projecting lumbar vertebra—both illiacs and the middle sacral arteries were filled with a firm coagulum; in the left, which was traced, this coagulum extended through its divisions and along the femoral. The ureters were much enlarged, being nearly the size of a finger. The bladder was found to contain fully four pints of urine, and was not as fully distended as its capacity would admit of, a circumstance accounted for by the frequent involuntary evacuations which preceded immediate dissolution. The rectum was much diminished in size. The neck of the bladder was buried in a mass of condensed cellular tissue completely infiltrated with lymph, resembling a solid mass of diseased structure. The coats of the bladder were much thickened and soft, the mucous coat being thickened and plicated—the fundus and anterior portion of the body were free and were capable of extension.

These appearances would seem to justify the opinion that the case had been one of chronic cystitis of long standing, commencing most probably at the period of the first injury received three years before; and is an evidence of the fact that inflammation of this viscus may exist in a chronic state and be purely local in its character for a considerable time, slowly producing great changes in its tissues, unrevealed by any very prominent indications of disease. The length to which I have already extended this article, precludes me from adding more than that I have not yet found in the books which I have been able to consult, the record of a similar case, presenting the pathological conditions here detailed. There are many points of practical importance involved in its history, but these I must reserve as the subjects of reflection and future comment.

Art. IV.—*Cases of Laryngo-Tracheitis:— 1 coming under treatment in the 1st stage, 2 in the second, Recovery, Remarks:— by* John Cronyn, *Fort Erie, C. W.*

So abundant is the present era of our professional history in the production of real or supposed novelty, and so rich appear to be the results of the labour of its members, in the development of new facts or coining of new theories, that it requires some amount of moral courage to bring before the senior members of the profession merely cases which have neither the charm of novelty nor the attraction of brilliant elucidation to recommend them. I believe it will be conceded however, that it is by no means an unprofitable task to review, from time to time, the facts we have observed and endeavour to derive from them some general rule or law by which to be guided, before the data enabling us to do so, have faded from memory. I am induced therefore to transmit for publication in your valuable Journal, the following cases, if deemed worthy a place therein; not so much to found any rule upon, as to add my mite in corroboration of a particular line of treatment.

Case 1.—Wm. D——, Æ., 5.—A strong healthy boy; Augt., 18, 1850, at about 10 o'clock, P. M., was, without any cognizable prodroma

suddenly awakened from sleep, with difficult breathing, cough, &c., I was soon in attendance and found all the symptoms peculiar to true inflammatory croup, in its first stage, present; his features had attained a dark purple colour and the difficulty in respiring appeared so great as every moment to threathen suffocation. He was at once placed in a hot bath, cold being applied upon the head, in a little time his breathing was somewhat relieved, his struggles in the bath, however, rendered it necessary to remove him, before the desired effect was produced by it:—Ft. V. S. ad ℥v R. Pot. Tart. Antim. gra. iij. Aquæ ℥v iij. Solve. Sum. Cochl. parv: vij. q: semi hora vel pro re nata; the first dose of the antimony was given in sufficient quantity to produce vomiting, with the view of relieving the stomach of its contents, which I had been told was loaded with a hearty supper; this accomplished, gra. iv. of calomel was placed upon the tongue and swallowed and the antimony continued; for two hours the symptoms improved, but at the end of this time, in spite of a constant state of nausea, the breathing was again becoming difficult, the cough producing its peculiar ringing sound, the pulse increased in fulness and hardness and the agitation of the child could scarcely be controlled, I removed ℥v. more of blood from the arm and followed with the administration of the antimony (as above) in frequency sufficient to keep the child under its nauseating influence; I also now commenced giving small doses of calomel and Dover's powder every 4th hour; this treatment was continued until 8 o'clock, A. M., when every unfavourable symptom had disappeared:—Omit Sol. Antimonii et R. Hyd. Chloridi gr. 1, Pulv. Antimonialis gr. ½, Pulv. Doveri gr. 1, Misce Ft. Pulv. quaque 6ta Hora. Sum:—this prescription was continued for two days, the bowels being kept freely open; all medicines were then omitted, directions were given as to care and regimen, a very rapid return to his wonted health took place.

Case 2.—C. A——. Oct., 3, of sanguine temperament and strumous tendency has enjoyed ordinary health until within a week or so, when she was observed to have a slight cold with dry hacking cough, but attracted no special attention:—on the night of the 19th Jany., 1852, her parents were suddenly aroused by her loud ringing cough, the hoarseness of her voice and oppressed breathing; some domestic remedy which produced vomiting, was administered, temporary relief followed and in the morning she was thought as well as before; the ensuing night brought about the same train of symptoms, only greatly aggravated, the domestic means employed were found inefficient, the child was not allowed to go to sleep and with the morning's approach, some amelioration of the symptoms took place. On the evening of the 21st I was sent for, (a distance of 10 miles) and the above related to me.

I found the child with features turgid, vessels of neck prominent and full, voice hoarse, respiration laboured, inspiration crowing, expiration attended with a clicking sound situated in larynx, very little cough and complains of no pain; skin hot and dry, tongue slightly furred white, bowels open, pulse 120 full and bounding. To have a

hot bath at once, warm hop poultice to neck R. Pot. Tart. Antim. gr. iij Aq. ℥viij Solv. ft. Sol. Cochl. Parv. ij q. Hora Sum. etiam Hyd, Chlorid. gr. i Pot. Nit. gr. iij Pulv. Dov. gr. i. M. P. Pulv. q. 4ta Hora Sum. warm diluents, &c.

Jany. 23d.—Had no paroxysm last night as on the two previous ones, after each dose of antimony vomiting occurred, much tenacious mucous was coughed up and at one time a large piece of pseudo membrane; very marked relief followed the elimination of this last and the child fell into a quiet sleep for some time; on awakening the cough was found more troublesome and clangous, voice more hoarse, but the breathing remained free, turgidity of features and fulness of vessels of neck less, skin moist, bowels open, pulse 112 and of less volume.—Cont. Med. et App. to neck, &c.

23d.—Had several suffocative paroxysms yesterday evening and last night, followed by the expulsion of large casts of false membrane. Is now much better, features have their normal look, respiration quiet, yet the pressure of false membrane below the glottis is obvious, the voice clear, cough harsh but not croupy, skin moist and cool, tongue furred, bowels confined, pulse 108 soft:—Cont. Med. Autim. Sol. q. 2da Hor. Hyd. Chloridi gra. iv mustard applications to sternum and side of neck.

25th.—Improving has coughed up several pieces of false membrane; Pulse 100, good, bowels confined R. Pulv; Purg; omit Hop App; rice water and diluted milk diet, Cont; other medicines.

26th.—Reported as continuing to improve, no hoarseness of voice, cough soft, breathes freely and is playful; Antimony given less frequently since last night. R. Pot; Tart; Antim, gra. iij Acet Scillæ ℥i. Decoct. Polygala Senega v. ℥ij. ft. Mistura Sum. Cochl. Parv; q. 4ta Hora R. Hyd; Chloridi gra. ij. Pulv Ipecac gra. ½, Pulv; Dov; gra. ij. M. Ft. Pulv; q. 6ta Hora Sum; if any difficulty of breathing should occur, increase the quantity of the mixture so as to produce vomiting.

28th.—Was more restless last night than for several nights previous, but to day appears better; slight sibilant rale at root of lungs, cough soft and expectoration copious, skin moist and cool, bowels confined, tongue covered with a brown fur, pulse 96, soft and compressible. C. nt; Mist; ut super et Pulv; q. 8va. Hora Pulv; Cathart; Appl; Sinapisms ad theoracem.

30th.—Doing very well, sibilant rale gone, tho' a little hoarseness and cough with slight clicking sound in Larynx remain, tongue cleaning, bowels open, passed several worms, Pulse 100 good, Cont; Med.

Feb'y. 1st.—Reported as having had a very bad day yesterday, the antimonial mist; was increased, emesis produced and large casts of pseudo membrane discharged, much is described as being swallowed and passed per anum in conjunction with worms; Cont; Misturæ R. Hyd. Chloridi gra. vi. Sodæ Bicarb; gra. xij Pulv; Dov; gra. vi. M. ft. Pulv; divide in chart, vi. una quaque 4ta Hora Sum; upper end of Sternum to be blistered with an ammoniated liniment.

2nd.—Very much improved, still a little clicking sound in Larynx, cough soft, expectoration free, bowels open, tongue clean, pulse 108 soft,—Omit; Antim; et Soda, Cont. Cal. et Pulv. Doveri q. 8va. Hora et R. Potassæ Carbonatis gra. lxiv Vini Ipecac ʒiv. Decoct; Polygalæ Senegæ ℥viij ft. Mist; Sumat ʒiij q. 4ta Hora. Apply Liniment to side of neck to vesicate.

4th.—Larynx Trachea Bronchiæ appear free from rale or any other impediment to respiration; Cough very slight and soft, the vesication of neck has produced slight irritative fever for which R. Liquor Ammon; Acet; Dil; et Nitr; Potassæ q; 4ta Hora Omit; Cal: et Pulv; Dov; Cont; Mist.

6th.—Convalescent blistered surface to be healed slowly, medicines to be omitted, bowels kept freely open, diet light and nutritious but unstimulating.

April.—Since the above this little patient has had Bronethitis from which she recovered slowly, but thoroughly and is now in about her usual health.

Case 3.—The infant son of H. L.——Æt. 6 mos., suffered in January, 1852 from an attack of Bronchitis in connection with dentition from which he soon recovered; has been very healthy until March 10, 1852, when I was requested to visit him in consequence of a croupy cough, suffocative paroxysms and fever which all the domestic remedies that were given failed to remove. I found the child with anxious countenance very restless, frequent hard ringing cough causing him to cry when it occurred, respiration hurried inspiration crowing loud tracheal rale, skin hot and dry, bowels open, tongue clean, pulse 140 wiry. The gum being much swelled over the upper incisors I freely scarified it. R. Pot; Tart; Antim; gra. iij Pot; Nitratis ʒi Liquor; Ammon; Acet ʒv. Aq. ℥viij. M. ft. Sol. Sumat Cochl: ij parv. 3tia Hora to produce emesis et gutta; xxx q. Hora Sum; etiam Hab; Hyd; Chloridi gra. ij Pulv; Dov; gra. $\frac{1}{8}$ M. q. 2da Hora; hot salt to neck.

11th.—Is better—Cont; Med; &c.

12th.—Not so well,—Cont; Med; &c.

13th.—Reported as much better and as having thrown up large pieces of stuff answering the description of false membrane and passing still more per anum. R; Acet; Scillæ Vini Ipecac; Aa; ʒij Vini Ant; Pot; Tart; ℥j, Decoct; Polygal; Senegæ ℥vii; M. ft. Mist; Sumat Cochl; Partia; q. 3a. Hora; Cont Pulv; q. 8va. Hora; Hot Salt, &c.

14th.—Not so well.—Cont. Mist. R; Hyd. C; creta gra. vi.

Sodæ Bicarb; gra. vi. M. ft. Pulv; et divide in chart; vi. una q. 4ta Hora Sum. foment chest with infusion of hops as hot as it can be borne.

15.—Much better—Cont; Mist; q. 6ta Hora omit Pulv.

18.—Convalescent.

Remarks.—In Case 1, is exemplified the fact, that recovery in cases of croup happen in proportion to the early adoption of medical measures, therefore if we are called to the case early, our only difficulty

will be in the selection of these measures. Among the endless specifics it would be folly to look and it would be tedious to compare the relative value of the modes of treatment recommended by the best authorities; all admitting, however, the necessity for antiphlogistic treatment and the greater number agreeing upon the utility of blood-letting and tartar emetic, Drs. Cheyne, Stokes, Mr. Porter, &c., it would be but reasonable to expect favourable results from these means, early and energetically employed.

In Case 2, a more intractable stage of the disease presents itself in a very bad subject. Were the active measures of the first case admissable here? To the extent of abstracting blood, I thought not, notwithstanding the state of the circulation: for it struck me, that though the more urgent symptoms might be more readily mitigated by bleeding, the extent of false membrane already formed, the exhaustion consequent upon the tediousness of its elimination, and in the progress of the case, the almost certain occurrence of Bronchitis, contraindicated it in any way. I therefore trusted to the administration of tartar emetic, as strongly urged by Dr. Cheyne in the second stage of croup, to the deobstruent effects of mercury, to the reputed absorbent action of alkalis. Sir B. Brodie (Mr. Hird in Med. Gaz. Dec. 4, 1846.) and to expectorants and counterirritation, every care being taken to supply a sufficiency of nourishment, the result has been fortunate though tedious; would it have been the same or would the recovery have been expedited had I had recourse to blood-letting general or local or both? I think the solution of this question of the greatest importance to the country Practitioner, who is invariably only called upon to treat this or any other disease when the domestic pharmacopæia is exhausted, he is consequently more likely to find croup in the second stage than in the first:—of the truth of this only see case 3. which occurs under similar circumstances, but fortunately in a better subject and recovery takes place more rapidly.—In as much as croup is a common and frequently fatal affection in Canada. The individual experience of the Profession upon the most efficient mode of treating it, would, it appears to me, confer a lasting advantage.

Art. V:—*On the Winter of* 1851–2 *in Canada, by* Captain J. H. Lefroy R. A., F. R. S.

The impression that the past winter was one of a character almost without a precedent, if not in the actual severity of the cold, yet in its long and steady continuance, appears to have been so general throughout Canada and the United States, that it is worth while to examine how far, upon such a subject, fading impressions may be brought into comparison with vivid and recent ones, and whether the winter in question has really surpassed in severity any thing included within the

memory of the present generation. I am not acquainted with sufficient data for extending the inquiry further back than the winter of 1831–2, but for the twenty-one winters embraced between that year and 1851–2, the observations of the Rev. C. Dade, made in or near Toronto, and published in that most valuable work Scobie's Canadian Almanac for 1851, together with those of H. M. Observatory, furnish two series which can be easily connected for the purpose, provided no permanent instrumental or local difference has existed between them. In order to ascertain this point, I have compared the mean values for 8 A. M. for each winter in or the during six years in which the observations were contemporaneous.

They were as follows: one summer month is added for comparison.

TABLE I.

Year.	July.		Nov.		Dec.		Jan.		Feb.		March.		April.	
	Dade	Obs.	Dade	Obs.	Dade	Obs.	Dade	Obs.	Dade	Obs.	Dade	Obs.	Dade	Obs.
1841.....	67.7	64.3	34.3	34.1	27.8	27.4	23.0	21.8	20 0	18.2	26.8	24.6	39.8	38.3
1842.....	67.0	63.3	31.6	31.4	24.0	23.0	25.0	24.7	25.8	24 3	35.9	33.9	43.0	41.2
1843.....	66.8	62.9	31.5	31.7	30.8	29.5	26.6	26 6	13.5	11.3	20.0	19.1	40.5	39.2
1844.....	68.6	65.2	33.3	32.8	27.5	27.2	19.0	18 0	24.2	24.1	31.4	29 3	47.6	45.6
1845.....	67.2	67.3	35.0	35.1	19.6	19.0	23.8	25.3	24.6	24.0	33.7	34.3	42.7	41.4
1846.....	71.8	69.1	...	...	...	...	24.7	23.9	18 8	16.7	33.2	32.6	43.0	43.4
	63.18	65.35	33.14	33.02	25.94	25.22	23.63	23.38	21.15	19.77	30.17	29.02	42.77	41.52

These observations were made at Mr. Dade's present place of residence, near Oakville, about 18 miles S. W., from the Observatory and I believe somewhat more distant from the shore of Lake Ontario, nevertheless the Observatory mean temperature is lower than that shewn by his register in almost every instance, sometimes as much as 2°. on the average of thirty-five months 0°.8 lower. In the summer the difference is very considerable; If however the large body of open water, having necessarily, a temperature higher than the mean temperature of the air, must mitigate the cold of winter, to some sensible extent, in its immediate neighbourhood; we might expect that during the summer it would temper the heat, and thus in part account for the latter circumstance; that such is the effect of the great Lakes to the North and West of Upper Canada there can be little doubt, or that it influences the whole climate of the region, but as Lake Ontario is immediately supplied from Lake Erie, the summer temperature of which from its position, and its shallowness, must be very high, and

the neighbourhood of Toronto must doubtless be influenced by the prodigious body of water poured out from the mouth of the Niagara River, it may be questionable whether its surface temperature is not higher rather than lower in summer than the mean temperature of its northern shore: and in effect it appears by a monthly observation made for eleven years from the extremity of the Queen's wharf, at the entrance of Toronto bay, and about 500 feet from the shore, that the surface water *alongside the wharf* has a mean temperature of 70°, in July, that of the air being only 66°3. I am not satisfied however with this evidence; to get the temperature of the water correctly, it should be observed at a greater distance from any radiating surface than circumstances have hitherto permitted; in fact from a boat at some distance from the shore: the point is worth the attention of persons residing near the shore. I am inclined to attribute the difference in summer to the great care with which the thermometer at the observatory is protected from direct and indirect radiation, and placed in an artificial shade more complete than is usually thought requisite, although admitting a free circulation of air from W. N. and E.: in the winter in addition to this cause it may be partly due to extreme temperatures sometimes falling on the Sunday mornings, which have been recorded in the one case not in the other.* To whatever cause due the *average* difference is not sufficiently large to preclude comparison, and the observations in the earlier years of the series, to which alone I shall have to recur, having been taken at the Upper Canada College in Toronto, would probably differ considerably less than these.

Mr. Dade's observations are given for 8 A. M. only; to reduce them to the true mean of the 24th. We must apply the following corrections derived from ten years observations:—

In January,	add	2.02.	In July,	substract	0.14.
February,	"	3.08.	August,	add	0.18.
March,	"	2.09.	September	"	0.77.
April,	"	1.15.	October,	"	1.55.
May,	"	0.30.	November,	"	1.65.
June,	"	0.21.	December,	"	1.98.

The exceptional character of the diurnal curve of temperature for the month of February, or more probably that of January, which instead of being colder than February is in Canada slightly warmer, is a peculiarity worth notice, but is established by every year of the series, with one exception. The following are the mean temperatures for each of the winter months, in the whole series.

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* An instance of the narrow limits within which considerable differences of actual temperature may occur, is given by Mr. Glaisher, who noticed at temperature of zero at his own house, at Lewisham, on the 11th Feb, 1845, at 7.25, A. M., that it had been — 1.5, while at the Royal Observatory, Greenwich, two or three miles distant, at the same hour, the temperature was 8.8, and on the Thames — 10.5. Upon this occasion, a thermometer placed on the snow, and freely exposed to the open sky, fell to — 11.2, a temperature which few Canadian readers are prepared to hear of, as occurring in the neighbourhood of London, under any circumstances.

Comparison of mean winter temperatures for twenty-one years at Toronto. Mr. Dade's observations with the foregoing corrections down to 1840, inclusive.

TABLE II.

	NOV.		DEC.		JAN.		FEB.		MARCH.		APRIL.		MEAN OF SIX MONTHS.
	8a.m	Mn.	8a m	Mn.	8a.m	Mn.	8a m	Mn.	8a.m	Mn.	8a.m	Mn.	
1830–1.....	.....	.....	.....	.....	17.4	19.4	12 4	15.5	33.2	35 3	41.8	42.9	....
1831–2.....	33.4	35.0	12.6	14.6	19.0	21.0	16.7	19.8	28.0	30.1	38.0	39.1	26 60
1832–3.....	34.0	35.6	28.7	30.7	25.5	27.5	14 6	17.7	33.9	36.0	43 7	44.8	32.05
1833–4.....	30.9	32.5	28.8	30.8	16.4	18.4	27.3	30 4	30.6	32.7	43.0	44.1	31.48
1834–5.....	33 5	35.1	23.6	25.6	20.5	22.5	14.4	17.5	27.2	29.3	39.0	40.1	28.32
1835–6.....	34.0	35.6	21.4	23 4	22.0	24 0	10.9	14.0	20.2	22.3	37 2	38.3	26 26
1836–7.....	30.7	32 3	23 7	25.7	15 7	17.7	19.5	22.6	22.3	24.4	37.0	38.1	26.80
1837–8.....	35.7	37.3	26 3	28.3	25.4	27.4	12.8	15.9	32.2	34.3	35.0	36.1	29.88
1838–9.....	.....	.....	. ....	... .	.....	.....	.....	.....	.....	.....	.....	.....	.....
1839–40.....	33.0	34 6	27.0	29.0	15.0	17.0	26.5	29.6	32.0	34.1	42 3	43.4	31.28
1840–1.....	34.0	35.9	22 3	24.3	21 8	25.1	18.2	22.6	24.6	27 8	38.3	39.2	29.15
1841–2.....	34.1	35.3	27.4	29.7	24.7	27.5	24 3	27.5	33.9	36.2	41 2	43 0	33.20
1842–3.....	31 4	33.1	23.1	25.3	26.6	28.5	11.3	15.0	19.4	21.7	39 2	41.0	27.43
1843–4.....	31 7	33.1	29.5	30.6	18 0	19 9	24.1	27.3	29 3	31.7	45 6	47.6	31.70
1844–5.....	32.8	34.8	27.2	28.8	25 3	26 3	24.0	26.8	34.3	35 9	41.4	42.1	32.45
1845–6.....	35.1	36.7	19.0	21.5	23 9	16.1	16 7	20.8	32.6	33.7	43.4	43.9	28 78
1846–7.....	39.4	40.8	24 5	27.7	21.9	22.9	19.7	22 5	24.6	26.7	39.1	39.8	30.07
1847–8.....	37.4	38.7	28.4	30.6	26.2	27.8	24.0	27.0	26.8	29.1	40.7	41.3	32.42
1848–9.....	.....	34.3	.....	29 6	.....	18.5	.....	20.0	.....	33.9	.....	39.4	29.28
1849–50.....	.....	42.3	.....	26.9	27.2	29.1	23.1	26 4	28.3	29.6	36.9	38.2	32 08
1850–1.....	36.5	38.7	20.6	22.5	22.2	25.6	26 5	28 3	30 4	33.1	40.4	41 5	31.62
1851–2.....	31.0	32.7	20.1	21.6	16.7	18.4	21.1	23 8	25.7	27.8	37 3	38.3	27.10
Mean.....	.....	35.7	.....	26.3	.....	22.8	.....	22.4	.....	30.7	.....	41.0	29.89

It will be seen that the mean for the *six months* compared is actually the lowest since the winter of 1836-7; and although slightly exceeded in severity by that winter and two earlier ones in the series, the difference in its favor is so trifling, both in that case, and as compared with the winter of 1831-2 that it might possibly disappear, if, instead of deducing mean temperatures, from one observation daily, which in individual months leaves a liability to error to the extent of about one degree, we possessed it from observation. This remark does not apply to the winter of 1835-6, which is said, however, to have the most severe in North America since 1779-80, and was decidedly more severe than that of 1851-2.

So far therefore, the winter taken in its popular extent, maintains its character, but this results chiefly from our having excluded October, and included April. October 1851 was unusually warm and genial, having had a mean temperature of 47°.8 which is 3°.3 higher than the mean for the same series of years, while April, 1852 has been one of the coldest in it.

It is also remarkable that the lowest mean temperature of the series does not occur in any one month of the past winter, and is only approached by two, November and January: there was no individual month in it nearly so extreme of its kind as December 1831, January 1833, February 1835, and February and March 1843. The first of these is so very remarkable that but for the privilege Mr. Dade has kindly given me of consulting his original journal, I should have suspected an error. It appears that in this year the cold set in on the 28th November, and with such severity that the mean temperature at 8 A.M. for three weeks, from the 30th November to the 18th December inclusive was only 10° 0—lower than the *mean* for the same hour for any one winter month at Montreal.

We may next refer to the meteorological winter, or months of December, January, and February: the mean of which is given in the following table, together with the lowest temperature at 8 A.M. in each season—the lowest at any hour, and the number of observation which indicated at that hour temperatures below zero, and from zero to 20° in the three months.

TABLE III.

Winter.	Mean Temp.	Lowest at 8 A.M.	Lowest at any hour.	No. of Ob'ns at 8, A.M. B'low Zero.	No. of Ob'ns at 8, A.M. Zero to 20.	Winter	Mean Temp.	Lowest at 8 A.M.	Lowest at any hour.	No.of Ob'ns at 8, A.M. B'low Zero.	No.of Ob'ns at 8, A.M. Zero to 20.
1830–1		—16.	"	2	38						
1831–2	17 8	—20.	"	6	61	1842–3	22.9	- 6.1	-11.0	2	28
1832–3	25.3	— 6.	"	2	37	1843–4	25.9	- 7.5	- 8.5	5	16
1833–4	26.5	— 2.	"	1	35	1844–5	27.3	- 3.6	- 5.5	2	16
1834–5	21.9	—15.	"	6	40	1845–6	19.5	- 9.5	-16.2	5	31
1835–6	20.5	—20.	"	10	43	1846–7	24.3	1.1	- 2.2	0	33
1836–7	22.0	— 7.	"	5	39	1847–8	28.5	-11.8 (m)	-12.0	1	19
1837–8	23.5	— 2.	"	1	"	1848–9	22.7	-15.2	-15.2	6	27
1838–9	"	"	"	"	"	1849–50	27.5	2.7	- 5.4	0	18
1839–40	25.2	—8.0	-19.2	7	"	1850–1	25.5	-12.8	-12.8	2	25
1840–1	24.0	—2.0	- 8.3	1	34	1851–2	21.3	-10.6	-14.8	3	34
1841–2	28.2	2.3	- 0.2	0	11						
at 7, a.m.								24.15			

We see that taken in its meteorological sense the past winter was less severe than those of 1831-2, 1835-6, and 1845-6, but ranks decidedly among the coldest of the series. In respect to the lowest temperature recorded it has been often exceeded. The winter of 1831-2 appears to have been the most exceptional of the whole, and it may be mentioned in this connection, on authority of Mr. Paine's observations at Boston, that the winter of 1827-8 was the mildest of the last 27, it is stated that the Hudson River did not close at all in that winter.

Toronto Bay was frozen over on the 13th December, 1851, and within a day or two of that early date was crossed in sleighs from the neighbourhood of the Queen's Wharf; as to the date, it has been frequently frozen as early, in 1835 it was frozen on Dec. 1, in 1845 on the 3rd, and in 1840 on the 6th December, but in most, if not at all of these cases broke up again; this was not the case in 1851, when it was so solid that as early as December, 18, the steamboats found it necessary to land their passengers at the edge of it, half-a-mile or more beyond that point, and at one time were reduced to landing them with great difficulty and some danger, upon the south side of the Peninsula, by boats, indeed the ice extended in a solid state considerably beyond the new Garrison, and with a broken margin nearly to the east point of the Humber bay, thus presenting a solid surface almost as far as could be seen from the city; all which are circumstances of very rare occurrence. Although the closing and opening of the bay are affected by accidental circumstances and an uncertain criterion of the character of the winter, the following memoranda on the subject may be interesting, the dates previous to 1840 are extracted from Mr. Dade's valuable notes, and for the subsequent years derived chiefly from memoranda kept for his own information by Serjeant J. Walker, Royal Artillery.

BAY FIRST FROZEN.		BAY OPENED.	
1832,		1833,	April 4,
1833,		1834,	March 14,
1834,		1835,	March 30,
1835,	December 1,	1836,	April 25,
1836,	"	1837,	April 16,
1837,	December 14,	1838,	April 2,
1838,	"	1839,	"
1839,	"	1840,	March 28,
1840,	December 6,	1841,	April 12,
1841,	December 18,	1842,	March 17,
1842,	"	1843,	April 23,
1843,	December 13,	1844,	"
1844,	December 18,	1845,	"
1845,	December 3,	1846,	April 8,
1846,	December 15,	1847,	April 19,
1847,	December 26,	1848,	March 31,
1848,	December 25,	1849,	March 29,
1849,	December 26,	1850,	April 3,
1850,	December 13,	1851,	March 24,
1851,	December 13,	1852,	April 17,

There is one circumstance, in addition to the state of the thermometer, which very much affects the impressions derived from the senses as to the severity of a winter, namely the occurrence of high wind with a low temperature; such was the case on many of the coldest days of the past season, particularly in December and January when a long continuance of searching westerly gales enhanced the sufferings of those badly provided with fuel, food or clothing to a distressing extent. The following are a few examples:—

TABLE IV.

1851-2.	Temperature. Mean	Below the average.	Lowest.	Velocity of Wind. Mean per hour.	Above the average.	In Miles Highest hour.
				m	m	m
December 25	10.00	15.2	—14.8	8.94	2.74	12.8
" 16	4.78	21.4	— 3.2	10.58	4.38	16.1
" 17	4.93	21 2	1.8	12 27	6.07	17.0
January 20	0.85	21.8	— 3.8	13.47	6.73	17.8
" 19	1.37	21.2	—10.6	10.17	3.44	18.8
" 15	3.75	18.9	— 6 2	7.42	0.68	18.0
" 17	6.77	15.8	2.0	7.59	0.85	14.2
" 22	8.08	14.5	— 0.6	10.26	4.52	14.1
" 13	10.75	11.9	7 0	9 .08	2.34	14.2

On every one of these very cold days we have a high wind. With regard to direction, the mean direction, and mean velocity for each of the above months, from five years registration by Robinson's aneometer, and the mean of the same months in the past winter, are given below :—

	Mean of 5 years. Direction.	Velocity.	1851-2. Direction.	Velocity.
November	W. 31 N.	4.87,	W. 37 N.	4.70,
December	W. 33 N.	6.20,	W. 8 N.	7.37,
January	W. 31 N.	6.74,	W. 30 N.	7.67,
February	W. 39 N.	6 65.	W. 16 N.	6.42,
March	W. 53 N.	6,45,	W. 83 N.	5.81,
April	W. 71 N.	6.96,	N. 23 E.	6.68,

There was an unusual prevalence of westerly wind to December and February, of northerly in March, and of easterly in April, the other months offer nothing unusual, nor is the quantity of wind excessive in any other month than December and January.

It does not appear from Table III. that any very distinct alternation of mild and severe winters is to be recognized in the period covered by the comparison; on the whole, however, we find that of the last nine winters, six were warmer than the average, and, of the previous nine, six were colder than the average;—this latter period again, as there is reason to think, was preceded by a series of mild seasons, so that there are some grounds for supposing that we may now expect a succession of the opposite character; but, it is evident, that a very cold winter frequently occurs in a warm series, and a mild one in a cold series. Of the former character may have been that of

1809–10, which by this rule should fall in a warm group, although it will long be remembered by the old inhabitants of Canada, for the memorable *black night*, the 18th January, 1810, in which the temperature changed in a few hours from a high thermometer, with rapid thaw, warm and genial sunshine, to the most intense frost, producing distress and devastation unparalleled in their recollection. There are probably in existence some precise notes taken on this remarkable occasion, but I have not been able to hear of them.

Art. VI:—*On the White Globules of the Blood in Disease.* By James Bovell, M. D., Toronto.

In the twenty-third and twenty-fourth numbers of *Brathwhaite's Retrospect*, Prof. Bennett has called attention to the increased presence of the white globules of the blood, as indicative of a diseased condition, and he proposes to apply the term Leucocythemia to this morbid state, merely, however, "as expressing the simple fact, or a pathological state, and involving no theory." He has also ascertained that "the blood may be loaded with a multitude of cells *exactly resembling those of pus;* that such blood may circulate in the human subject for months or even years, without destruction to life, and that this condition is always associated with disease in those organs, the functions of which have hitherto been involved in the greatest obscurity, constituting facts which seem calculated to exercise an important influence on many views that have been long agitated in science." The condition of the blood, as observed by Dr. Bennett, is as follows:—

"On examining the blood of living persons (by pricking the finger with a needle, and examining the drop between glasses in the usual way under the microscope), the yellow and colourless corpuscles are first seen rolling confusedly together, and the excess in number of the latter over the former is at once perceived. This, however, becomes more evident after a short time, when the coloured bodies are aggregated together in rolls, and leave clear spaces between them, which are more or less crowded with the colourless ones." Instances of Leucocythemia have been noticed by previous observers, and it may be useful to refer to them, with a view of shewing both the importance of the subject, and the extent of our obligations to Prof. Bennett, for his truly valuable papers.

"That the colourless corpuscles are really present in increased numbers in the blood in disease, says Mr. Hassall, is attested by the evidence of numerous observers: thus, Gulliver, Davy, and Ancell have observed them in unusual quantities in inflammatory affections, and especially in such as are attended with suppuration. Donne has recognized them in increased quantities in disease, and Mr. Addison in the base of boils and pimples, and in the skin in scarlatina, and in most cutaneous affections. In inflammatory diseases, observes Mr. Gulliver, especially when attended by suppuration, whitish globules, which I have elsewhere described, as those of pus, may be found in

unusual numbers in the blood: and Mr. Ancell in his valuable lectures has mentioned several interesting observations in illustration of the fact; thus, as he remarks 'in one of the early numbers of the *Philosophical Transactions*, a case of this kind is recorded' as milk coming from the veins; and Hewson describes this diseased serum as sometimes having the appearance of whey, with white streaks swimming on its surface like cream, and now and then being white like milk, whilst the coagulum is as red as usual, and that when examined under the microscope, *it is found to contain a number of globules* which are never seen when it retains its transparency: they are smaller than the particles of the blood, and spherical in shape, agreeing more nearly with the globules of milk than with the blood corpuscles. A well marked case occurred in the wards of St. Georges's Hospital, under Dr. Wilson, in a female with general anasarca; the serum resembled milk, and had a low specific gravity. Mr. Lane examined it microscopically, and found that it contained a great quantity of globules, as described by Hewson, but resembling *chyle granules* very closely, and *not the milk globule*. In the *Lancet* for October, 1839, Mr. Lane has published some very curious observations on the 'Pus Globules,' as seen in the blood, wherein he says, 'in the first place, to add my testimony to the truth of the most prominent facts brought forward by Mr. Gulliver, but principally with a view to facilitate similar inquiries, by explaining a very simple method of not only detecting (by aid of the microscope) the presence of the pus globule in the smallest drop of blood taken during life, but also of preserving the specimen for future reference. In this way a series of observations may be made with facility on the appearance of the blood corpuscles in various diseases, and of any addition to them of pus, or other visible material, whether the product of disease or of healthy function, as of the admixture of the chyle granule with the blood. The method which I have adopted consists simply in procuring a drop of blood by puncture with a needle in the extremity of the finger, or by using a lancet in some less sensitive part. The drop of blood is to be received upon a piece of glass, which should be immediately placed upon its edge, so that the blood in gravitating may leave a single layer of the corpuscles at the upper part. Any superimposed layer will tend greatly to obscure the blood corpuscles themselves and will entirely conceal the less frequently occurring particles.—The glasses thus prepared will enable the observer at once to detect *the pus globule* (white globule?) which will generally be found interspersed amongst the blood corpuscles especially near the margin of the specimen. For the purpose of illustration I will select two out of many specimens of blood thus prepared for microscopical observations. The first marked No. 7 was taken from a patient labouring under Phthisis with purulent expectoration. With the $\frac{1}{2}$ inch object glass which takes in a field of the 1-16th of an inch in diameter as many as one hundred of the so-called pus globules, may be enumerated, and with the $\frac{1}{8}$ of an inch object glass, sixteen pus globules may be distinctly seen. In the 2nd specimen marked No. 10, the blood was taken from a man suffering from suppuration in

the fore arm, after diffuse cellular inflammation; and as if to confirm the fact that these bodies seen by Mr. Lane were really the white globules of the blood and not Pus he adds that "It is necessary to state that in the blood taken from the human subject and from animals apparently in health the pus globules though few in number, may be detected in almost every instance." Mr. Paget in his lectures on inflammation has also stated the general circumstances under which we may expect to find an increase of the white globules, and observes:—"I therefore cannot but accord with the opinion often expressed by Mr. Wharton Jones and Dr. Hughes Bennett, that especial abundance of white corpuscles i. e. *rudimental blood-cells*, in the vessels of an inflamed part, is neither a constant nor even a frequent occurrence; and I believe that when such corpuscles are numerous in an inflamed part, it is only when they are abundant in the whole mass of the blood. Now as already stated they are thus abundant in some cases of inflammation, especially, I think, in those *occurring in people that are in weak health*, and in the tuberculous. We thus perceive from the testimony of several observers that under circumstances as narrated by Prof; Bennett, we may expect to discover Leucocythemia

Having lately had the opportunity of making a few observations on this most interesting diseased state of the blood confirmatory of Dr. Bennett's views they are with much diffidence submitted in proof of his position. In the month of April 1851 the General Lying-in Hospital Toronto was for the first time visited by infectious disease. The first case admitted was that of a large masculine woman who came in late one evening from the village of Markham and under the plea of fatigue and destitution, prevailed on the excellent matron to allow her to remain until the next day, when as she was near her confinement she hoped to be confirmed in her admission by the visiting physician. On the following morning however she was found too ill to rise, complaining of general malaise, shivering and acute pain in the right ankle joint.

(To be continued.)

Art. VII:—*Remarks on the Meteorological Register, by* Captain F. H. Lefroy, R. A., F. R. S.

The form in which the observations of the Barometric pressure and the temperature of the air, are given this month (April 1852) is one which requires explanation, and being impressed with a conviction that it offers several advantages over the ordinary practice of printing the actual observations of the Barometer and Thermometer. I am desirous of making it as intelligible as possible to all who may consult the register.

The object of printing meteorological observations is two-fold,—first to determine certain physical constants and supply the necessary data for comparing different regions in respect to climate, and to all those atmospheric influences by which animal and vegetable life are

so materially affected,—secondly, to supply materials for tracing out the laws of storms, the progress of the seasons, their greater fluctuations and various other interesting enquiries. It might perhaps be added to these reasons, that they are published to satisfy a rational curiosity which seems inherent in the natives of all climates subject to much variation, and is justified by the daily increasing importance of the subject. Such then being the rationale of a practice which is sometimes rather irreverently regarded, it is evident that the first class of enquiries involves almost exclusively *mean values*, and scarcely requires, except for authentication, the publication of details; the second class on the contrary depends principally on details, and only involves mean values as fixing or defining the fluctuations of the individual observations. At the same time it is desirable that the means, when referred to for this purpose, should be as accurately determined as for the other, otherwise all conclusions will be affected by a constant error.

The present register is an attempt to satisfy one enquiry, while promoting the other. All the mean results are given as heretofore, but instead of giving the individual observations in the case of the two elements in question, the value given is *the difference of the atmospheric pressure and temperature at the time of observation from its normal value*, for the same *hour* in the case of the Barometer; for the same *day and hour* in the case of the Thermometer. The mean Barometric pressure has been derived from seven years hourly observations, giving for the hours of 6, A. M., 2, P. M. and 10, P. M. respectively, in the month of April, at a point about 108 feet above the level of Lake Ontario, the values which are entered under the denomination "Normal Mean" at the foot of the table. The actual observation at any particular hour is in this case recovered by simply applying the quantity entered for that hour, to this quantity, with its proper sign. Thus having for 6, A.M. on the 1st April — 0.270 inch of pressure, and the normal mean 29.659 inches, we see in a moment that the actual observation at that hour was 29.389.

In the case of the thermometer, the matter is a little, and but a little less simple. We cannot here take temperatures observed at any period of the month as comparable with the mean temperature for the month at the same hour, as the latter in strictness is true only for the middle of it.

The mean temperature appropriate to the beginning and end of the month will be obviously different. The following is the method which has been here adopted. The mean temperature for each day of the month was first assigned from all the observations on that day in nine, ten or eleven years, as the case may be, the omission of Sunday causing a difference: the whole were previously reduced, if necessary, to standard. From the mean of these we have a true mean for the month, which in the case of April was 41° 2., similarly it was found to be 30° 5. for March, and approximately 52° 2. for May. These values show that from the 15th March to the 15th April the mean temperature increases at the rate of 0° 35. per day, and at the rate of

0° 36. from 15th April to 15th of May, consequently if n represent the interval between any given day in April and the 15th of the month, the true mean temperature for that day, if in the earlier half will be

$$t=41° 25—0° 35. n.$$

if in the latter half, will be

$$t=41° 25+0° 36. n.$$

In this way a normal mean temperature was determined for each day, and the difference between these values and the observed mean temperature of the day, is the quantity entered in the column of mean. With respect to the individual readings of each day, they were also first referred to the normal mean for the day, and the differences then corrected for the horary fluctuation, or difference between an observation at that hour and the mean of the twenty-four hours, determined by seven years of hourly observations, all which may be done in less time than it takes to describe the process.

To recover an actual observation apply the mean horary fluctuation for the hour of observation, to the quantity

$$t=41° 25—0° 35. n \text{ or } t=41° 25.+0° 36. n$$

as the case may be, the sum is the appropriate mean for the date and hour in question, and this value added to the value in the table (paying regard to sign) will be the value observed. Thus, we have at 6 A.M. on the 1st April +2° 1. The true mean for that date is 41° 25.—0° 35×15=36° 4., and the mean for 6 A.M. in April is 5° 5. lower than the true mean for 24 hours. The normal mean for the observation was therefore 36° 4—5° 5=30° 9. and the quantity entered being +2° 1., the observation was 33° 0. As it rarely happens that actual observations are referred to, with purposes which require the absolute scale value, little inconvenience can result from the apparent length of this process. The extremes of the month are given as heretofore.

April 1852 was remarkable for the steady prevalence of low Barometric pressure, giving the lowest mean value for the month which has ever been observed at Toronto, it will be seen that the Barometer rose above its mean value on four days only, in the whole month. The temperature of the air was also generally below the mean, especially during the day time; a circumstance attributable to the unusual prevalence of cloudy weather—and did not attain by 14° the *average* maximum temperature. It will be noticed also that so large a quantity of snow has not fallen in the same month in 13 years, all of which circumstances point it out as a remarkably dull and backward spring month.

[*Note by Ed.*—Without attempting to establish a connection between the remarkable meteorological conditions here given by Captain Lefroy and the sanatary state of this City during the same month, it is nevertheless worthy of observation that the type of all prevailing diseases was peculiarly asthenic and congestive. In many instances where accurate examinations were made of the characters of special cases of disease, as exhibited by the blood, a clear indication of

deficient vital power was manifest, in the general faulty quantity and ill condition of the blood corpuscle and the general anæmic state of the viscera and tissues; the rapid prostration occasioned by even the most ordinary attacks of disease was a circumstance noticed by every one. This may be considered a mere coincidence; but it is by a multiplication of coincidences that general laws may be established:—here then we have a satisfactory proof of the value of contrasting observations of this nature with those of meterological phenomena.]

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Dr. Richardson, Toronto; Dr. Chewett, Toronto; Dr. Rolph, Toronto; Dr. Stratford, Toronto; Dr. Duncomb, Richmond Hill; Dr. Courtland, Bytown; Professor Hind, Toronto; Dr. Herrick, Toronto; Dr. Langstaff, Richmond Hill, 2 years; Dr. Dickson, Kingston; Jos. Morrison, Esq , M. D., Quebec; Dr. Jones, Lloydtown; Dr. Widmer, Toronto; Dr. Clarke, Belleville; Mr. Jarron, Dunville; Dr. McKelcan, Hamilton.

ERRATA.

In Mr. Jarron's *paper* on Endemic Fever, *published in the last number of this Journal.*

page 3 *line* 23 *for* "serious and complicated *typhus*" *read* "*types.*"

page 3 *line* 38 *for* "spending an *hour*" *read* "*a few hours.*"

PUBLICATIONS RECEIVED.

Dublin Medical Press. 4 Nos.

Nelson's Northern Lancet. April and May.

Canada Medical Journal. May.

Second Report on Observations of the Aurora Borealis for 1850-51. by J. H. Lefroy, Captain R.A.F.R.S.

Dr. Gregory's Letter on Animal Magnetism. American reprint. T. McLear, Toronto.

The "International Journal."

With a view to supplying in the registers of this year, not only an epitome of the principal meteorological characters of each of the past twelve years, but also information calculated to facilitate meteorological observations and in some cases supercede the necessity of reference to the volumes in which those at H.M. Magnetical Observatory are or will be published at large; the following table of thermometric reductions is given. It contains the quantities by which the mean temperature at the hours named, differs in excess or defect from the true mean, and which are therefore to be subtracted in the one case, and added in the other, to reduce means derived from observations at any one or more of those hours, to true means. They are derived from hourly series for seven years. and are probably sensibly correct for the whole of Canada and the Northern States.

Month.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	Noon.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	8 p.m,	9 p.m,	10 p.m
March -	4.75	3.93	1.89	0.25	4.15	5.15	4.67	3.92	2.35	0.03	1.00	1.63
April -	5.48	3.22	1.09	1.01	4.86	6.16	5.91	5.12	3.42	0.66	1.78	2.59
May - -	5.40	2.43	0.06	2.11	5.87	7.21	7.17	6.80	5.05	0.43	2.31	3.29

MONTHLY METEOROLOGICAL REGISTER, at

Latitude: 43 *d.* 39.4 *m. N. Longitude:* 79 *d.* 21 *m. W.*

Mgt.	Day.	Barom. at tem. of 32 deg. abv. or blw. the mean.				Temperatnre of the air. abv. or blw. the mean.				Tension of Vapour.			
		6 A.M.	2 P.M.	10 P.M	mean.	6 A.M.	2 P.M.	10 P.M.	mean.	6 A.M.	2 P.M.	10 P.M.	mean.
c	1	0.279	0.220	0.063	0.179	2.1	9.7	6.0	4.5	0.159	0.172	0.117	0.142
c	2	0.100	0.031	0.042	0.033	3.9	11.6	6.1	8.2	138	140	139	133
c	3	0.129	0.157	0.168	0.156	6.4	11.0	7.8	9.6	111	141	094	110
d	4	0.152	0.097	—	—	11.4	9.8	—	—	105	148	—	—
d	5	0.179	0.311	0.465	0.348	0.6	14.4	3.2	6.2	147	158	180	163
b	6	0.469	0.245	0.069	0.243	2.8	9.9	3.4	5.9	162	160	181	169
a-c	7	0.027	0.000	0.019	0.015	13.1	4.8	2.3	6.4	099	203	137	151
c	8	0.067	0.117	0.108	0.098	6.3	5.4	1.0	4.4	124	160	125	139
c	9	0.137	0.088	0.005	0.068	3.1	3.1	3.0	3.6	148	103	139	131
e	10	0.038	0.003	0.020	0.005	3.9	1.6	3.5	3.5	137	165	131	142
c	11	0.073	0.145	—	—	8.3	6.2	—	—	122	141	—	—
c	12	0.236	0.207	0.215	0.217	1.5	0.4	2.6	0.4	147	195	182	177
c	13	0,182	0.096	0.146	0.140	0.9	6.0	0.9	2.9	192	224	212	205
b	14	0.323	0 376	0.401	0.373	0.7	1.8	4.1	0.2	203	270	166	213
c	15	0.480	0.454	0.333	0.412	1.3	4.8	2.3	2.3	140	202	235	199
b	16	0.247	0.203	0.209	0.219	3.0	1.2	5.6	1.8	170	211	217	216
b	17	0.292	0.234	0.248	0.256	5.9	2.0	5.6	2.5	184	218	274	221
c	18	0.382	0 333	—	—	4.5	2.4	—	—	239	279	—	—
a-d	19	0.317	0.334	0.367	0.345	6.9	1.1	6.1	4.3	232	239	244	241
f	20	0.446	0 446	0.504	0.470	6.7	3.2.	3.2	1.1	258	219	231	229
e	21	0.641	0 761	0.860	0.757	4.3	2.9	6.1	4.2	209	252	306	257
f	22	0.719	0.585	0 357	0.554	2.7	6.9	1.2	3.1	207	180	189	185
e	23	0.361	0.267	0.174	0.258	7.7	12.9	7.5	10.4	137	171	160	158
d	24	0.082	0.078	0 079	0.080	6.7	6.4	5.2	5.9	129	186	164	163
c	25	0.113	0.144	—	—	5.3	11.0	—	—	139	134	—	—
c-b	26	0.300	0.377	0.282	0.323	1.9	9.9	5.2	6.4	196	239	171	202
c	27	0 284	0.231	0.209	0 239	6.3	8.5	6.6	6.9	156	140	168	155
b	28	0.180	0.167	0.135	0.157	7.7	5.4	9.2	6.8	144	137	160	145
c	29	0.147	0-128	0.110	0.120	5.3	1.0	2.7	2.8	136	193	161	155
c	30	0.105	0.126	0.279	0·176	0.1	6.0	1.6	2.1	136	152	252	182
	31												
Nrml.	Mean.	29.659	29.639	29.640	29.644					0.162	0.186	0.128	0.177
Obsv.		29.412	29.409	29.430	29.416	34.29	42.53	37.10	38.29				

Highest Barometer - 29.822, at 12 p.m. (midnt.) on 3rd. } Monthly range :
Lowest Barometer - 28.778, at 12 p.m. (midnt.) on 21st. } 1.044 inch.

Highest *observed* temperature 53.8, at 4 p.m. on 29th. } Monthly range :
Lowest registerd temperature 19.8, at 6 a.m. on 7th. } 34.0.

Mean of highest *observed* temperature - 42.82,
Mean *registered* Minimum temperature - 32.06. } 10.76.

Greatest daily range, 19.5, from 2 p.m. on 15th to 6 a.m. on 16th.

Warmest day, 21st. Mean temperature, 47.58
Coldest day, 3rd. Mean temperature, 27.48 } Difference : 20.10.

The present "Means" are derived from six observations daily, viz :—at 6 a.m. ; 2, 4, 10, 12, p.m.

Ice totally out of Toronto Bay on 17th April.

(*a*) A marked absence of magnetical disturbance.

(*b*) Unimportant movements,—not to be called disturbance.

(*c*) Marked disturbance,—whether shewn by frequency or amount of deviation from the normal curve,—but of no great importance.

(*d*) A greater degree of disturbance,—but not of long continuance.

(*e*) Considerable disturbance,—lasting more or less the whole day.

(*f*) A magnetical disturbance of the first class.

Toronto, May, 1852.

H. M. Magnetical Observatory, Toronto, C. W.---March, 1850.

Elevation above Lake Ontario, 108 *feet.*

Humidity of Air.				Wind.			Rain in inches	Sn. in inch	Weather.
6	2	10	M	6 a.m.	2 p.m.	10p.m.			
85	93	77	79	s b w	s b E	w b N	- -	0.7	Clded.; snow slty. 2 p.m.; halo round moon at 10 p.m.
92	80	89	84	Calm.	w sw	w b s	- -	0.2	Overcast; snowing slightly from 8 a.m. to 2 p.m.
80	78	64	72	w s w	w	Calm.	- -	-	Clouded a.m.; aurora lt. at 10 p.m.; halo rd. m. at midn.
91	76	-	-	Calm.	E b N	E NE	- -	-	A.m. cleer and fine; p.m. overcast.
78	97	100	92	E N E	E b N	NE b E	- -	8.0	Densely c'ouded; very heavy snow storm from 1 p.m.
97	80	100	93	NE bE	N NE	NWbW	- -	0.5	Snowing and drifting most of the day.
89	36	71	81	Calm.	sw	W sw	- -	-	Generally clear; fine; a few light clouds dispepsed.
84	67	60	70	Calm.	sw b s	NW bN	- -	-	Lt. clds. dsprsd, genrlly. clear, fine; faint aurora midn.
88	39	72	65	N NW	NW bN	NW bN	- -	-	Unclouded; very fine day; aurora from 8 p.m.
82	53	69	68	NW bN	W b s	N	- -	-	Unclouded; do. aurora from 9 continuing most of ngt.
86	58	-	-	Calm.	E b s	E NE	- -	iapp.	A.m. clear and fine: p.m. light clouds dispersed.
69	62	90	74	Calm.	s	E b N	- -	-	Mostly clear, fine; faint aurora from 8.30 p.m.
91	89	97	92	E NE	s	Calm.	0.110	-	Overcast all day; foggy; slight rain from 2 to 11 p.m.
95	90	62	83	Calm.	s sw	NE b n	- -	-	Slt. rn. at 6 a.m.; dense fog p.m.; aurora lt. 10.50p.m.
64	53	93	71	N	N NW	NW bn	- -	-	Light clouds dispersed, fine; aurora from 7.42 p.m.
90	62	75	77	NW	s sw	Calm.	- -	-	A.m. clear and fine; oercst. lt. clouds and haze 6 p.m.
69	71	94	76	E b N	E N E	E	0.430	-	Densely overeast; constant rain from 5 p.m. to 11 p.m.
93	90	-	-	E	E	E b N	Inapp.	-	Slight rain 6.15 a.m.; afternoon dull and gloomy.
82	68	79	76	E b N	E NE	NE b E	0.100	-	Overcast; dgll; slight rain from 2 p.m.
90	71	83	80	E NE	E b s	NE b E	Inapp.	-	Slt. spitting r. at 6 a.m.; d.dusy.oercst. ft.au.st. 10a.m.
79	65	96	79	N NE	N NE	NW bN	0.225	-	Densely overcast; slight but constant rain from 1 p.m.
82	66	78	74	NW bN	N b E	NW bN	- -	-	Oercst. lt. clouds and hz.; aurora fm.8 p.m.to 1.15 a.m.
79	78	82	82	NW bN	NW bN	Calm.	- -	iapp.	Particles of snow 5 to 6 a.m.; day densely clouded.
71	65	76	70	NW	S SW	NE	- -	-	Clear save a few lt.cds.disprsd.at 2 p.m.very fine d.&n.
71	55	-	-	NE b N	E b s	N b E	0.100	-	Light clouds a.m.; rain 3.50 p.m. to 5.50. slt.& h. 6.30.
87	93	78	36	E NE	N N E	NWb n	Inapp.	-	Slt. r. till 8 a.m.; foggy dull gloomy d.; drizg. r. ocly.
80	51	79	69	W b N	W NW	NW	- -	iapp.	Dense masses dtchd. clouds passing; slt. sn. 1 & 2 p.m.
78	44	80	63	W NW	NW bN	SW b s	- -	-	Mostly clear; a few clouds dispersed; fine day.
67	52	63	60	NW	S	Calm.	- -	-	Unclouded: very fine day.
53	48	95	64	N NE	E SE	E b s	1.025	-	Cds.a.m.; c. from 4 p.m.; r.from 9.10 p.m.,l.&t.10 to 1.
81	69	81	76	Miles. 5.29	Miles. 8.51	Miles. 5.00	1.990	9.4	

Sum of the Atmospheric Current, in miles, resolved into the four Cardinal directions.

North.	West.	South.	East.
2060.51	1435.88	446.71	2124.45

Mean velocity of the wind—6.68 miles per hour.
Maximum velocity - 21.7 miles per hour, from 5 to 6 p.m. on the 5th.
Most windy day—5th: mean velocity—18.42 miles per hour.*
Least windy day—13th: do. 1.69 do.
Most windy hour—1 p.m.: do. 9.37 do.
Least w ndy hour—9 p.m.: do. 4,96 do.
Mean diurnal variation—4.41 miles.

* This is the highest average for one day at Toronto since 1847.

COMPARATIVE STATEMENT.

Year.	Temperature.				Rain.		Snow.		Wind.
	Mean.	Hgh.	Low.	Rnge.	Days.	Inches.	Days.	Inches.	Mean velocity.
1840	42.35	65.9	25.3	40.6	14	3.420	2	No record	Miles.
1841	39.25	62.9	22.1	40.8	3	1.370	3		
1842	43.02	89.5*	21.6	67.9	8	3.740	2		
1843	41.01	70.0	25.1	54.9	7	3.185	3	0.1	
1844	47.63	74.5	17.2	57.3	10	1.515	1	inapp.	
1845	42.10	66.0	14.8	51.2	11	3.290	4	1.5	
1846	43.93	79.4	24.4	55.0	10	1.300	2	1.3	
1847	39.81	65.6	8.4	57.2	8	2.870	2	4.0	
1848	41.26	65.4	26.5	38.9	5	1.455	1	0.5	4.89
1849	39.39	70.9	23.2	47.7	10	2.655	2	1.7	7.50
1850	38.17	63.2	18.3	44.9	7	4.720	2	1.1	7.64
1851	41.49	59.2	25.8	33.4	11	2.295	3	1.2	8.07
1852	38.23	53.8	19.8	34.0	6	1.990	4	9.4	6.68
Mn.	41.36	68.18	20.19	47.98	8.5	2.600	2.4	2.1	6.96

* A very remarkable rise of the thermometer took place between 1 and 2 p.m. on the 23rd April, 1842, and lasted several hours.

Review.

The Progress of Comparative Anatomy.

Many of our professional brethren may not have ready access to the London periodical press, and therefore we make no apology for drawing largely, for their benefit from the last Quarterly Review, for an able exposition of this subject constructed upon the works of OWEN. Nor is it uninteresting to mark the manner in which the labours of that philosopher are prominently brought before the lay portion of the public, by a publication not usually supposed to be partial to, or very familiar with Medical Science either directly or in its collateral departments. This review is the more acceptable from the admirable manner in which it opens up the whole question of this valuable portion of scientific investigation, the relation of which to every department of human knowledge is so intimate. Opening with a just and well merited tribute to the memory of JOHN HUNTER, the reviewer introduces Mr. Owen to the attention of his readers by stating that the impression likely to be produced on perusing the catalogue of his works, fifteen of which are enumerated, these being only the larger books, would be that of a man of age, whereas Mr. Owen is comparatively a young man. Having been at an early period of life in the Navy, he at the close of the last American war, commenced the study of medicine with the hope of being shortly again employed in the same branch of service. It was under the eminent Dr. Barclay of Edinburgh that his love for comparative anatomy was confirmed. From Edinburgh he went to Bartholomew's, and there attracted the attention of ABERNETHY who encouraged him to look for a permanent position in that school. Being frustrated in this design and expectation by the nature of the regulations, which gave strict precedence to the hospital apprentices, he availed himself of the interest which he still possessed, and having obtained the promise of an assistant surgeonship he called on his excellent but eccentric friend to bid him farewell.

" 'What is all this ?' said Abernethy—'Where are you going?'

'Going to sea, Sir.'

'Going to sea—going to the devil!'

'I hope not, Sir,'

'Going to sea! You had better, I tell you go to the devil at once'—reiterated glorious John—dwelling on the temptations, the difficulties, the loss of time and fame that must be the result of so rash a step, and insisting on another interview after the pause of a week. Owen revisited his rough but downright friend at the expiration of that time, when Abernethy proposed an appointment in the College of Surgeons. This was accepted :—our youthful anatomist found him-

self happily associated in congenial labours with one of congenial mind; and so the Navy lost a good officer, and science gained one of her brightest ornaments.' "

After glancing at the state of the Hunterian Museum in 1826, and the singularly responsible position in which Mr. Clift was placed, when put in charge of that national monument of great mental victory in an unknown field unassisted by the powerful aids of modern science, and the difficulties opposing the formation of a long desired catalogue, we are led to examine the results of the combined exertions of these two congenial spirits in the mastery of these difficulties and in the promotion of the science itself.

The great difficulty encountered in arranging and classifying the Hunterian collections, was to ascertain the species of animals dissected by the founder, some general remarks on the subject of the preparations or the particular physiological principles to be illustrated by them, being all that remained from the pen of Hunter. Owen who had acquired a knowledge of the principles of zoology at Edinburgh, now resumed the study of the external characters and affinities of the animal kingdom, with the aid of Mr. Broderip. From this time we find him employed in the preparation and publication of the catalogues of the various departments of the museum. In the introduction to the volume containing the nervous system and organs of sense, the connective and tegumentary systems and peculiarities, is embodied a remarkable manuscript of Hunter, illustrative of his application of the facts of comparative anatomy which he had ascertained, not only to the establishment of sound theories as to the functions of the different organs, but to the natural distribution of animals into classes according to their affinities. The two concluding volumes of the 'Descriptive and Illustrated Catalogue' called for acknowledgment on the part of the council of the College of Surgeons.

'The unremitting labour which has been for many years bestowed on this work by Mr. Owen, one of the Conservators, and now Hunterian Professor of Comparative Anatomy and Physiology to the College, to whom its publication has been exclusively confided.'—vol. v. p. xv.

Mr. Owen truthfully says, with reference to the labours of his great prototype.

'The period which has elapsed before these general laws began to be appreciated in the country where they were first detected, affords, perhaps, one of the strongest indications of the great advance which Hunter had made in physiological science.'

The idea of progressive development was somewhat obscurely pointed out in Hunter's manuscript on the "progress and peculiarities of the chick" from which we may perceive says Owen, "that his mind

was oppressed with both its novelty and vastness," and he adds "men's minds require to be familiarized with propositions of such generality before their exact limits and right application be appreciated."

Some idea may be formed of the vast mass of anatomical labour involved in the illustration of the works of his great predecessor, by perusing the following:—

'It is impossible,' he says, 'to reason correctly upon the structure of a detached organ, unless the condition of the rest of the organisation, and the habits and mode of life of the species be known; but to this end the name of the species from which the detached organ was derived is indispensable; without this fact, the contemplation of the most elaborately dissected specimen can yield little satisfactory information, and to determine it became, therefore, the first and most essential step in the formation of the catalogue of the physiological specimens. This part of their history has, in most cases, been effected by a comparison of the Hunterian preparations with recent dissections.'—*Phys. Cat.*, v. xiv.

From the sponge to the man no form of animal life has escaped his researches, and he seems to have thrown new light on each subject. In the memoir on the Lepidosiren is given the first account of one of the most extraordinary of vertebrated animals, if that can be so called which vertebræ has none; he establishes by a train of most beautiful anatomical evolutions the true piscine character of the animal. In regard to that form of quadrumanous mammal which makes the nearest approach to man, and of which Curvier appears to have entertained obscure ideas, from the fact of his being acquainted only with the immature characters of both the Orang and Chimpanzee, Owen communicated the required knowledge at a time when the revival of the hypothesis of the transmutation of species began to agitate the scientific world. Most of the characters which were supposed to bring the Orang and Chimpanzee in disagreeable proximity to man are shewn to be transitory and peculiar to the immature animal, whilst yet retaining the deciduous teeth. His investigations of the several species *Pithecus* and *Troglodytes* from Borneo, and the Gaboon River have been of the most startling and elaborate nature. It would, indeed, be futile to analyze even in the briefest manner the subjects of his numerous works and minor contributions; nor can we contemplate the wonderful amount of admirable labour they display, without being struck by the power and energy of him who has done so much for fame and for science before he has passed the prime of intellectual life! His merits and name are universally known, and he is recognized throughout Europe as the Cuvier of England.

We shall proceed to consider the effect of his labours on the classification of the animal kingdom.

(To be continued.)

Correspondence.

To the Medical Profession of Canada West.

TORONTO, *May* 14, 1852.

GENTLEMEN,—

Many circumstances connected with the progress of this country, have hitherto conspired to keep the Profession to which we belong, and by which we live, in a comparatively subordinate place in the social scale. It appears to me that the greatest obstacle to our attaining the position to which we are entitled from every consideration, is the absence of unanimity among ourselves—an evil engendered by the ignorance in which we live, not only of each other personally, but of our mutual wants, opinions, and acquirements.

To remove this barrier must be the desire, I am sanguine enough to believe, of every conscientious and enlightened practitioner,—I, therefore, invite you, as many as can conveniently attend, to meet in this city, on Thursday, the 1st day of July, for the purpose of taking such counsel together as may lead to a course of action calculated to place the Profession on a proper footing.

I make this appeal to you, because I feel deeply interested in the welfare of a Profession of which I have been for many years an active member in this country and elsewhere, and because I believe I am one among the oldest of the practitioners in this Province. I invite you to meet here, because it is the capital of this Province, easily accessible at that season from all parts of the country, and because a point of centralization is necessary in every undertaking of this nature.

Should it be considered a more convenient mode of proceeding, I suggest that each county should assemble, and elect a number of delegates who would represent the views of their constituents. Permit me to make one request in connection with this point, should such a plan be adopted: banish from your minds every other consideration but the interests of your Profession, and select men of experience, education, and enlightened views.

I am, Gentlemen,

Your most obedient servant

And sincere well-wisher,

C. WIDMER.

To the Members of the Medical Profession.

GENTLEMEN,

"Whoever has thoughtfully considered human life, as it exists in this stage of man's progress, will hardly require personal experience to be convinced that, in any large body of men, there must, of necessity, be a certain proportion who, for some reason or other, fail to attain or to preserve that social position which can, at all times, secure to themselves and families the means of independent support, suited to their station; or even the means essential to the maintenance of bare life. And the slighest observation of what passes around them in the world, will leave no doubt on the minds of medical men, that the actual state of things regarding the members of their own class, affords a sad illustration of the truth of the general proposition.

From manifold causes, avoidable or unavoidable, springing from individual and personal sources or depending on more external relations of a professional or social kind, hundreds of medical men, their wives and children and other near relatives naturally dependent on them, are known to be in great distress, from the failure of that source of support on which they are necessarily dependent. Many of the causes of these misfortunes lie on the surface, and will be recognised by all. Of this kind may be mentioned:—Original deficiency of means requisite to gain a firm footing in practice; failure from over-crowding of the professional field, generally, or in particular localities; failure from other unavoidable causes; loss of friends who were kindly assisting the struggler in his early path; loss of fortune from accidental circumstances; and, above all, and most especially, loss of health in manhood, the infirmities necessarily accompanying old age, and finally death, which, sooner or later, must terminate the exertions of all.

It is altogether unnecessary to enter more fully into the sources, nature, or extent of the great and manifold evils now adverted to. Every one has only to question his own memory, or to look abroad on the field of his individual labours, to know and to feel, that the outline here sketched comes, every way, within the limits of reality. The inquiry is not—Do the evils exist? or, What is their amount? but—How shall we best relieve them and remove them, now and hereafter?

It is a principle universally recognised by men qualified to judge of human affairs, and especially by those who have devoted themselves to the cure of the social maladies of these latter times, that the only safe and sure mode of relieving and removing the distresses and difficulties of men dependent for support on their own exertions is, the Union and Co-operation of the individuals themselves, with the direct purpose of meeting and overcoming the evils to which their particular lot is especially obnoxious. Such is the providential arrangement of human affairs, and such the harmonious relations of events bearing on these, that a system of UNIVERSAL COMPENSATION is found to prevail, whenever men take pains to seek for and to envolve it. By means of this principle, most of the inequalities of lot among

mankind at large might be successfully coped with, if men made a proper use of their reason, under the guidance of philanthropy and benevolence. In particular classes of men of limited extent, united by special ties and having all their great interests in common, these individual inequalities might, for the most part, be easily met; and, much to the honour of our own times, in a great many cases they are so met. All that is requisite to effect this most desirable result is, that the individuals of the co-operating body shall consent, during their *ordinary* or *average state*, to make a trifling sacrifice of present means, a mere fractional deduction from some of their present superfluities or indulgences, or, at most, of their dispensable comforts, in order to provide that *general compensating medium*, to which they may look in the event of their falling below this ordinary or average state. Those who are so fortunate as not to require such compensation, have, by this arrangement, the gratification of knowing and feeling that they had prepared against the contingency which was as likely to be their lot as another's; while, at any rate, they have administered to the necessities of their less-fortunate brethren who, in a reversed state of things, would have been the benefactors and not the benefited. Money being now the universal representative of things relating to man's material wants, it is, of course, by means of it that the co-operative and compensative principle is carried into practical effect. It is in this point of view, that a mere trifle deducted from the weekly, monthly, or annual income of any set of men—scarcely at all missed at the time—may be made to return to them, in the day of their necessities, multiplied a thousandfold; and stand to them as strength in their weakness, health in their sickness, competence in their poverty, vigour in their old age, and even take the form of blessings to those nearest and dearest to them, when they themselves have paid the great debt which all must pay.

In all these arrangements of the co-operative or mutual kind, this essential quality, this crowning excellence, is never to be overlooked, namely, that while they stimulate and gratify the active feelings of benevolence and brotherly love in all who contribute to the general stock, they entail no sense of dependence, much less any obligation of charity, on those whose lot it is to draw from it. What they gave they gave voluntarily for the good of all; what they receive they receive as a right, not as a boon; or, if a boon, only such a boon as the best and most independent of men ought to be happy in receiving from their fellows, in recognition of the common weakness of their common humanity. So far from being a burthen on either party, such aid is, assuredly, of the kind that is "twice blessed, blessing him that gives and him that takes." Unlike eleemosynary relief, or charity in the common sense of the word, this mode of ministering to man's wants, so far from degrading the receiver or encouraging a slavish spirit of dependence, cherishes feelings of independence, excites the noble pride of self-reliance, engenders habits of moderation and prudence, and checks the tendency to imprudence and thoughtless extravagance so common to us all. Such an arrangement teaches even the young to look before and after, and forces every one to take that sober and

practical view of life which becomes all who have entered upon its active duties and incurred its manifold responsibilities."

Such are the eloquent and incontrovertible statements of the Board of Directors of the "BRITISH MEDICAL FUND," a Society which has existed for some years in England, and whose object is to unite the members of the profession into one body for mutual support and defence, on the common ground of humanity and professional brotherhood. The Society was first founded and conducted by Edward Daniell, Esq., at Newport Pagnel, but finding his original plan defective in some of its parts, and encountering much difficulty in working it in the country, he relinguished the direction of the Society in 1849, at a public meeting of the subscribers called for the purpose of placing it on a firmer and more scientific basis. The Society now numbers over 300 members, and is under the direction of such men as Sir B. Brodie, Sir James Clarke, Dr. Johnstone, Dr. Locock, Mr. Fergusson, Sir Charles Hastings, Mr. C. Hawkins, Dr. Golding Bird, Dr. Symonds, Sir John Fife and Drs. Babington and Forbes; the last named gentleman being the Chairman of the Directory. These names are I think a sufficient guarantee for the character of the Society. The following plan of the objects and constitution of the Society will I hope be sufficiently explicit.

PLAN AND OBJECTS OF THE SOCIETY.

This Society which is strictly confined to members of the Medical Profession, is divided into two separate and distinct Branches: a PROVIDENT BRANCH and a RELIEF BRANCH; its object being to afford the members every facility for providing for themselves and their families, by means of provident savings, sure resources against the infirmities of advanced age, and those evils arising from the contingencies of ill health, shortened life, or loss of fortune, which beset the path of all professional men.

All members of the Medical Profession throughout the United Kingdom, and who shall be duly qualified by law to practice, are eligible to become members of this Society. The terms of membership to consist in an annual subscription of One Guinea, or a Life Subscription of Ten Guineas.

1.—THE PROVIDENT BRANCH.

The Provident Branch is strictly a self-supporting fund, dependent on the premiums of the members subscribing to it; but a member having subscribed to the Provident Branch, may cease to subscribe to the Relief Branch.

The following are the different forms in which it purposes to carry out its objects:—

1. *Deferred Annuities to the members themselves*, varying from £10 to £100, to commence at any specified age, from fifty to seventy.
2. *Annuities (of like amount) to the Widows of Members.*
3. *Annuities (of like amount) to the Children of Members individually.*
4. *Family Annuities (of like amount) to the whole Children of a family conjointly.*
5. *Allowances of from £10 to £100 per annum, during Sickness or other incapacity, temporary or permanent*, to commence, at any age, on the occurrence of the incapacity.

6. *Fixed Sums (not exceeding* £200), *payable on the death of the subscribers,* to their heirs, on the ordinary principles of Life Assurance.

Before reversionary Annuities can be granted to any one, the number of Subscribers to Forms 2, 3, 4, must conjointly amount to 250.

Before allowances under the Sickness Fund can be granted, the number of Subscribers to this branch must amount to 200.

THE RELIEF BRANCH.

This branch is strictly auxiliary to the Provident Branch. All sums paid to the Society under the name of Annual, or Life Subscriptions, Donations, Legacies, Bequests, &c., &c , belong to it. Its benefits are entirely restricted to members and their relatives. The Directors are invested with a discretionary power in granting relief to claimants; but the following are some of the most distinguished and special modes of appropriation contemplated by the Society.

a To grant advances or to afford other assistance to such Subscribers for Annuities, Sickness Allowance, or Life Assurance, as might otherwise be unable, from sickness or other causes, to pay their premiums when due.

b. To make donations to members who may be disabled by disease, or otherwise.

c. To grant relief, under similar circumstances, in special cases, to the widows and orphans, or other near relatives of members.

d. To augment, by annual grants, the annuities of widows and orphans, when, from particular circumstances, they are found inadequate.

e. To grant loans to members of a certain standing at low rates of interest, or even without interest, under special circumstances.

I have been in correspondence with Mr. Hawtayne the Secretary of the Society who has most kindly put me in possession of the necessary documents, tables and information required for the working of the Institution, and these can, with a very trifling correction be made to apply to this country, where the higher rate of interest obtained for money, will ensure a somewhat lower rate of premium and more certain success.

Having made myself familiar with the details of the system of this Society, I am prepared to submit a plan for the formation of a similar Society in this Province, and shall embrace the opportunity of the meeting called by the Honble. Dr. Widmer, or at such other time as may be most convenient for the majority of those who may signify their intention to operate in its establishment.

I may add that in all the departments, the rates of premium do not appear to be as high as the usual rates of ordinary Life Assurance Companies.

I shall be most happy to receive communications containing the name and address of those who feel disposed to join in this attempt to introduce a good and successful institution from the Mother Country.

I have the honour to be,
Gentlemen,
Your obedient servant,
HENRY MELVILLE, M. D.

TORONTO, MAY 15th, 1852.

AN IMPORTANT MOVEMENT.

We solicit an earnest compliance with the invitation contained in the letter of the Honorable Dr. Widmer, which is given under the heading, correspondence. We cannot refrain from expressing our conviction that if there should be a good attendance of the Profession on this occasion, the most important steps will be taken to place its members on that footing throughout the Province, to which they are justly entitled, and from which they have been hitherto debarred. The notice given is ample—the time chosen very favorable—and the place selected is, under all circumstances the most convenient and appropriate for the purpose. We therefore hope to see a full attendance upon that occasion. We have reason to know that it is only after mature reflection and some degree of hesitancy arising from personal considerations, that Dr. Widmer has formed the resolution of appealing to the Profession; let not the appeal be in vain; his age, his acquirements, his standing in the Profession and in society and the prominent part he has filled in the history of the Country, entitle him to what we know he fully enjoys, the respect and confidence of the Profession and the Public generally.

NOTICE TO CORRESPONDENTS.

"Medicus."—From the description you give of the case, there can be little doubt that it was one of "Purpura." The treatment we have generally found most successful, has been *tonic* and mild diuretics. We refer you to Cazenaave, Willan and Bateman, Wilson cum multis aliis. In almost every periodical for the last twenty years you will find cases recorded of a similar character. Will Medicus say why he has departed from the general rule of giving his real name to the Editor?

Mr. Jarron's letter and enclosures are thankfully acknowledged, his hints will be attended to.

Dr. Kellogg's communication in our next.

Dr. McKelcan's communication shall appear in our next issue. His suggestions, as far as practicable, will be complied with,

SELECTED MATTER.

—:o:—

PHYSIOLOGY.

ON THE PHYSIOLOGY AND PATHOLOGY OF THE PHOSPHATE AND OXALATE OF LIME, AND THEIR RELATION TO THE FORMATION OF CELLS.

By Dr. William Beneke, Resident Physician in the German Hospital, Dalston.

[In a small work lately published in Germany, the author has established the following results :]

1st. Just as in plants and inferior animals, the phosphate of lime is indispensably necessary in man for the formation of cells; this formation does not only depend upon the presence of albumen and fat, but likewise upon the presence of phosphate of lime.

2ndly. The want of phosphate of lime, either in plants or animals or men, causes a deficient formation of cells; and a great many pathological states of the system really seem to depend upon a deficiency of phosphate of lime.

3rdly. In accordance with these general laws, we must suppose that we are enabled to cure, or at least to alleviate, by the internal administration of phosphate of lime, diseases marked by emaciation, formation of ulcers, in one word, by a deficient formation of cells.

4thly I have shown by my experiments, that such really is the effect of the administration of phosphate of lime;—that is to say, I have produced by the internal administration of phosphate of lime, an undoubted increase of the cell-formation in diseases evidently showing a diminished formation of cells.

5thly. As diseases or affections of this kind, which have come under my observation, I have to mention:—

a. Ulcerations of any part of the system, which are based upon general dyscrasia, such as scrofula, and which are not merely local affections.

b. Infantile atrophy, especially the well known atrophic state of children suffering from rickets, and its accompanying symptoms, as diarrhœa, &c.

c. Tuberculous disease, more especially of the lungs, in its earliest stages.

6thly. There seems to be a remarkable connection between scrofula and deficiency of phosphate of lime. But as it generally ought to be mentioned, that we shall never be able to produce an increase of the formation of cells, unless we administer a wholesome, preferably nitrogenous diet; so it must be considered that the deficiency of phosphate of lime is only a constituent part of these diseases;

and by its mere use we are very well enabled to remove symptoms, which depend on its deficiency, but by no means shall we cure thereby the dyscrasia *in toto.*

The chief point of the facts on which these conclusions are founded is the great importance of inorganic substances in the formation of organic compounds. Liebig pointed out this fact with regard to the organic compounds of plants, these depending in some measure upon the presence of the inorganic constituents of the soil. And hence we must be induced to suppose that a similar relation exists in animals, and even in men. Dr. Beneke even supposes that in these organisations the inorganic are quite as essential as the organic compounds.

In Plants the azotic compounds are not produced without the co-operation of the phosphates. The produce of cells increases proportionately to the power and quantity of the manure afforded to the soil, and that this power particularly depends upon the presence of phosphates, the other salts really being of no great importance in this respect.

But there are different sorts of phosphates contained in the soil, such as phosphate of soda, phosphate of lime, phosphate of magnesia, and phosphate of iron, Is there any reason to believe one of these several substances to be more important for the production of nitrogenous substances and cells than the others ? Facts are not wanting which afford an affirmative answer to this question. The single experience that we may considerably increase the produce of nitrogenous substances and cells by manuring the land with ashes of bones, is quite sufficient to prove that the phosphate of lime is of the greatest importance in this respect. A great many analyses of ashes of bones, communicated in the "Annalen für Pharmacie und Chemie von Liebig und Wöhler," by Enderlin, Fresenius, and Will, and the analysis of bones by Berzelius, evidently show that the phosphate of lime is always present in ashes in a certain proportion, according to the nutritive power of the plants and the soil from which they are taken; and that, on the other hand, the proportion of phosphate of magnesia and soda in bones themselves is too small to partake of the influence exerted upon the soil by manuring it with bones. Berzelius found in 100 parts of dry bones, 53.04 phosphate of lime; 1.16 phosphate (carbonate ?) of magnesia, and 1.20 soda, with a small quantity of chloride of sodium.

On these facts, then, I have founded the conclusion, that the phosphate of lime is indispensably necessary for the formation of cells in plants.

With regard to the inferior animals, and the part which is performed in their economy by the phosphate of lime, I have only to mention an excellent paper by Dr. Carl Schmidt, "Zur vergleichenden Physologie der wirbellosen Thiere Braunchweig, 1845." In this paper Dr. Schmidt communicates most interesting experiments, from which it becomes evident, that the phosphate of lime has an intimate relation to the formation of cells. Dr. Schmidt ascertained beyond a doubt, that in the articulata the quantity of phosphate of lime increases or decreases proportionately to the quantity of chitin, a sort of colourless, transparent tissue, which is not soluble in water, alcohol, ether, and liquor potassæ, and forms the principal constituent part of the skeleton of all the invertebrata. Now, this tissue is the result of an active formation of cells during the period of changing the integuments in these animals, and so it results that the quantity of cells formed is proportionate to the quantity of phosphate of lime present. * *
Dr. Schmidt himself says :—These observations really are so striking as fully to

confirm the opinion before advanced; and he further adds as his firm belief, that a certain combination of albumen and phosphate of lime, or better, that a solution of albumen, which is saturated with the phosphate of lime, is particularly enabled to coagulate by the contact of heterogeneous substances, and to form membranes around them—that is to say, walls of primary cells.

Having become acquainted with these remarkable facts, I put forward the question, whether the phosphate of lime might not have the same relation to the formation of cells in the higher classes of animals, and even in men, as it has been shown to have in inferior animals and plants? I have been fortunate enough to obtain satisfactory and affirmative results.

The way in which I tried to solve the question was a double one—first, I had to prove that wherever we find a formation of cells, the phosphate of lime is present, and *vice versâ*, that the phosphate of lime is wanting where no formation of cells takes place; secondly, I had to show that the phosphate of lime is indispensably necessary for, and that it really influences the formation of cells.

First, I examined the serum, which was drawn by blisters. It is rather difficult to detect the phosphate in a single drop of the unaltered serum, the quantity of lime really being a very small one. However, in a single drop I detected crystals of the smallest size, by the addition of sulphuric acid, and by continued examinations I found that the crystals presented themselves the more quickly and well marked the sooner the formation of pus-globules took place in the serum, which was left beneath the skin. If I slightly evaporated the serum in a hot-water bath and now mixed a drop of the evaporated serum with sulphuric acid, a rapid formation of crystals generally took place, which undoubtedly showed the phosphate of lime to be present in large quantity. I then examined exudation-matter of wounds and ulcers, and these observations really afforded the greatest interest; they decidedly proved the relation of the phosphate of lime to the formation of cells. It will be well known to every accurate observer, that during the time of cicatrization of wounds and ulcers, two different sorts of exudation generally take place. First, an exudation appears, which I should like to call "spurious exudation," and which really exhibits nothing but a natural cover for the part affected or wounded, being far different from what we call "spurious granulations;" this exudation is subsequently thrown off; afterwards beneath this covering the real blastema is produced, affording the materials for the tissue which is to be formed, and undergoing the well-known changes to cells, tissue, &c. Well, then, if we examine microscopically what I have called the spurious exudation, we shall observe it to consist of amorphous, structureless masses; no cells are to be detected; it only seems to consist of molecules; no organization takes place. And even in these masses, by the addition of sulphuric acid, I have never observed the formation of sulphate-of-lime crystals, and consequently no phosphate of lime could be present. If, on the contrary, I examined in the same way the blastema produced beneath the spurious exudation, after the lapse of about twenty-four hours, I not only met with beautiful exudation-cells and pus-globules, but also, by adding a drop of sulphuric acid, could observe a rapid formation of crystals, so as to be led to the conclusion that the phosphate of lime is present in a large quantity, where cells are produced, and that it is wanting where we find nothing but amorphous masses. Lastly, with respect to this point, I have to draw the attention to the muscular tissue itself; and it will become evident, from my observations, how small

a quantity of phosphate of lime we are able to detect by the kind of examination alluded to. The muscular tissue is well known to contain a certain quantity of phosphate of lime; it was the result of Liebig's inquiries, that when the formation of muscular tissue from the constituents of the blood takes place, nearly the whole quantity of alkaline phosphates returns in the blood, and that at the same time a certain quantity of phosphate of lime becomes chemically fixed in the organs themselves. This quantity, then, however small it may be in a muscular fibre, which is so fine, as, by microscopical examination, to show the transverse stripes, I have detected, in the above described way, in a few muscular fibres which I had submitted to the action of sulphuric acid for about twenty-four hours. I observed, after this time, by the microscope, crystals of sulphate of lime—of course only in very small quantity, but beautifully formed. Especially in this kind of preparation the different stages of crystal-formation are to be well observed.

After these experiences, the other question remained—whether the phosphate of lime really influences and increases the produce of cells ? I have tried to solve this question in a double way, first by experiments, and on the other hand, by practical inquiry.

With respect to the experiments, it is my firm belief that I succeeded in artificially producing cells, which did not show any distinction from pus-globules and what we call exudation-cells.

First, I tried the phosphate of lime in patients who suffered from chronic ulcers, resulting from the scrofulous diathesis, and exhibiting a want of formation of cells in the highest degree. These patients had been for a long time under medical treatment, inclusive of my own, but all remedies had been fruitless, such as cod-liver oil, ointments of lead and zinc, lotions of nitrate of silver, &c. Being myself quite sure, that no influence of the former kind of treatment could be still remaining in operation, and even after having left off all treatment for a long time, I then ordered the phosphate of lime to about four or eight, to twenty grains per diem, and after a few days the ulcers evidently showed themselves in another state. The suppuration improved ; instead of an ichorous secretion, a pus bonum et laudabile was produced, and after a few days longer the cicatrization began. In children, in particular, I obtained very striking results, and there was not the least doubt, that the effect must be ascribed to the phosphate of lime.

In syphilis I had also tried the phosphate of lime, and even in persons who had for a long time already suffered from secondary ulcers, ulcers of the bones, &c., and became emaciated and extremely weak during that time. These cases likewise showed a most beneficial effect of the phosphate on the formation of cells. It ought to be mentioned, that besides the phosphates, the iodide of mercury was administered, but I have never met with such a rapid cicatrization of syphilitic ulcers, as was the case in these persons, and I could not help thinking that the cure was promoted in a remarkable degree by the internal exhibition of the phosphate.

As to other affections, in which I have tried the phosphate of lime, I have to mention rickets, caries, inflammations, and consecutive abundant suppurations of the cellular tissue, and also fractures of the bones. In all these cases, the administration proved most beneficial, and I would strongly advocate its further experimental use. With respect to fractures of the bones, I have to state in particular, that the consolidation of the callus took place in a much shorter period than is

generally the case ; however, too large doses of phosphate of lime must be shunned in these cases, as I have observed an abundant callus, causing a deformity of the bones, produced by the daily administration of twenty-four grains of the phosphate for a fortnight.

Having stated the principal facts, affording a proof of the relation of the phosphate of lime to the formation of cells, Dr. Beneke proceeds to add, that as the formation of cells is increased by the administration of the phosphate of lime, we may ask—in the diseases shown to be most beneficially influenced by the administration of phosphate of lime—is the phosphate present in the system in a smaller quantity than it ought to be in the normal state ? But it is impossible to determine directly the phosphate of lime which is present in the body. One might suppose the question might be solved by making accurate analysis of the blood, but he says :—We cannot avail ourselves of the analysis of the blood in order to solve the above question ; but there is another way which will enable us to do so, and this way is afforded by continued analysis of the urine and the fæces. Thereby we shall know what quantity of phosphates is thrown out of the system, and by comparing this quantity with the average quantity of phosphates taken with the food, we shall be very well enabled to judge of a general increase or decrease of the earthy phosphates in the system. However, as it is very likely that the greatest part of the phosphates contained in the excretions of the bowels originate directly from ingesta, and as it is certain, on the contrary, that the greatest part of the earthy phosphates contained in the urine originate from the wear and tear of the tissues and bones of the system, I have in the first place only directed my attention to the latter, and I have found the analysis of the urine to give a satisfactory answer to the question proposed.

The following now are the results of the analyses which I have performed, and which we may depend upon the more as most of them have been twice repeated. First, the urine which I marked by 0, always contains a very small quantity of phosphates; this quantity, however, cannot be detected in the above-described way, but it never seems to exceed the quantity of 0.2000 grain in one ounce of urine. There are many steps between no phosphates at all and of 0.2000 grain; they require a more accurate study in order to show the preternatural decrease of the quantity of earthy phosphates in the urine. But as we shall consider here only the hypernormal increase in the quantity of phosphates which are excreted in the urine in diseases, I am compelled to waive this discussion at present. I have only to state that in every case we may consider a urine marked by 0, as containing 0.2000 grain of earthy phosphates, or less; never more than this in one ounce. With respect to the other descriptions of urine, I should really far exceed the limits of this paper by adducing the results of the single analysis; they can be seen in a pamphlet which I have lately published in Germany, entitled, "Zur Physiologie uod Pathologie des Phosphorsauron und Oxalsauron Kalkes," Goettingen, 1850. Here I only beg to state the general results as follows :—

A urine marked by ½, contained nearly 0.250—0.300 grain of earthy phosphates in one ounce; a urine marked by 1,0.400—0.450 grain; a urine marked by 1½, 0.550—0,600 grains; a urine marked by 2, 0.700—0.750 grain; a urine marked by 3, 1.000—1.050 grains; and lastly, a urine marked by 3—4, 1.000—1.300 and more grains of earthy phosphates. By referring to these numbers we may easily

approximately calculate the quantity of earthy phosphates voided in twenty-four hours, and I am sure we shall never be far from the truth.

After these explanations I have to speak of the different quantities of phosphates which I met with in the urine in different diseases. My observations of course do not extend to all diseases ; it would scarcely be possible to give such accounts in a large number of years, notwithstanding I observed a sufficient number of cases with respect to this point for the deduction of some general results.

First, I have to remark generally, that scarcely any disease occurs, in the course of which we should not sometimes find an increased quantity of phosphates; that at any rate there exists no disease which does not admit of some hypernormal excretion of phosphates at some one of its periods; on the other hand, we meet at different periods of disease with quite different quantities of phosphates, as, for instance, it often happens that in the first stages of disease we do not find an increased quantity of phosphates at all, and that at a later period a large quantity is excreted. With respect to this point, and in order to obtain results which can be depended upon, it is therefore indispensably necessary to examine the amount of phosphates almost every day; we shall never arrive at correct views if we do not attend to this rule.

Secondly, it must be stated as a general result, that the quantity of phosphates excreted does not depend as well upon the nature of the disease itself, as upon the individual afflicted; and if in one case of rheumatism we find, for instance, a large amount of phosphates in the urine, we do not detect any increase at all, perhaps, in another case. This point really is a very important one; it affords the best proof of the general fact, that we are always wrong in speaking of certain diseases as of individuals, or as of well-defined and marked never-varying alterations of the physiological state of the body, and that we shall never succeed in obtaining positive results, if we do not direct the most accurate attention to the previous history and the former state of the individual who has become afflicted with any disease—in other words, if we do not individualize disease.

It may be concluded from these short remarks, that it is very difficult to give an account of the excretion of phosphates, generally applicable and absolutely right in almost every case. However, we meet with some pathological states which, generally speaking, very rarely show an increase of the excretion of phosphates; with other affections which always show an increased quantity of phosphates in the urine and even a most anomalous quantity; and with others which are generally distinguished by a slighter, but continued loss of phosphates. To these states and affections I shall now draw attention, and I scarcely know how to give a better explanation of them, than by referring to the numbers above alluded to.

I have met then with urine containing only such a quantity of phosphates as I have marked by 0 or $\frac{1}{2}$—

1st. In persons who, always showing a good state of health, a normal complexion and colour, and a strong constitution, have accidentally become afflicted with disease or injury, as, for instance, with syphilis, wounds, contusions, &c. As I really considered these persons as nearly healthy, at least for so long a time as the affection remained a local one, I am inclined to view the quantity of 0.1000—0.2000 grains of earthy phosphates in one ounce of urine as nearly the normal quantity. It must, however, be remembered, that it is always extremely difficult to speak of

normal states of health, a precise distinction between health and disease being incompatible with our present amount of knowledge, if conceivable at all.

2nd. In the first stages of acute diseases, as, for instance, of acute rheumatism, pneumonia, pleuritis, peritonitis, &c. When these diseases happened in persons who did not exhibit any other signs of diseased constitution, and had never been ill before, I did not, either during the whole course of the disease or upon recovery, find an increased quautity of phosphates in the urine. But it was seldom I met with such persons. When, on the other hand, persons were afflicted with acute diseases who never enjoyed good health before, or suffered from dyscrasia of the blood, I almost always met with an abnormal quantity of phosphates in the urine after the acute stage having ceased; there appeared now all the symptoms of the original dyscrasia, and either the reconvalescence was a very slow one, or emaciation, general weakness, &c., was still increasing; instead of acute tuberculosis, the symptoms of chronic affection of the lungs appeared; instead of acute rheumatism, chronic rheumatism remained. From these very remarkable differences I concluded with certainty, that it was not the disease itself which caused a decrease of the excretion of phosphates, but that this decrease was exclusively dependent upon the acuteness of symptoms, that is to say, the feverish action—a circumstance which I shall refer to in the following parts of this paper. It must also be mentioned, that in some cases of acute disease I met with a quantity of phosphates as marked by $\frac{3}{4}$ or 1, even during the first periods; in these cases, however, the quantity of phosphates was very considerable after the acute symptoms having ceased.

3rd. In the first stage of typhus fever. Here I always met with a decrease of the quantity of earthy phosphates in the urine, a result which, after a great many analyses, seems to be a characteristic one. With respect to the later periods of typhus, however, the same refers to them as I have stated on acute diseases generally.

4th. In some cases of Bright's disease, as well as in some persons who suffered from stenosis of the orifices of the heart, or from insufficiency of their valvules. But some cases also occurred where an absolute increase of phosphates was met with ; however, in these cases complications or affections of other organs could be observed; and I am inclined to suppose that the dyscrasia of the blood, which leads to the well-known degeneration of the kidneys, as well as the dyscrasia which results from the above-mentioned diseases of the heart, does not cause by itself any increase of the earthy phosphates in the urine.

5th. In the first stages of carcinoma (but only in these); an observation the more interesting, that Rokitanski alludes to the preternatural development of the bones, or the proportion of phosphate of lime in persons afflicted with cancer. I myself, found in a post-mortem examination of an individual who died from carcinoma of the lungs, all the cartilages of the ribs ossified; which was never the case in persons who during life passed for a long time increased quantities of phosphates. and had been afflicted, for instance, with tuberculosis.

I have to add, generally, that in all cases where I observed no increase of the phosphates in the urine during the *whole course* of a disease, I likewise never observed emaciation; that is, want of formation of cells; these persons altogether were of strong constitution, and showed a remarkable development of the muscles

In these persons blistered surfaces healed far more speedily than was the case in persons who passed a hypernormal quantity of phosphates, the average time being three or four days. Of course, in acute diseases emaciation was observed, though no abnormal loss of phosphates could be detected; the same was the case with Bright's disease. In these affections, however, many circumstances concur, which sufficiently account for the waste of tissues—circumstances which do not require any further explanation.

To sum up now the results of the first and second part of these communications, I have shown in the first that, supposing a sufficient quantity of albumen and fat to be present, the produce of cells evidently increases by the administration of phosphate of lime; that, on the other hand, by this administration we may promote the cure of diseases which show a deficiency of the formation of cells; and that especially in scrofulous affections the administration of phosphate of lime has often proved most beneficial. On the other hand, in the second part, I have established the fact, that in nearly all chronic diseases, where we observe a loss of flesh, emaciation, and general weakness, a hypernormal quantity of phosphates is always excreted from the economy by the urine, and more especially in those cases where the administration of phosphate of lime proved most beneficial. Perhaps it might be supposed that these quantities had been increased by the phosphate of lime taken as a remedy; but this is by no means the case; on the contrary, my observations prove, that even during the administration of phosphate of lime, the quantity of earthy phosphates in the urine often decreases, supposing a proper treatment in other respects to be employed. Well, then, the harmony of the results of the above two parts is so striking, that we can scarcely admit of any doubt in their truth, and the physiological as well as pathological importance of the points alluded to is so apparent, that it does not require any further explanation. We know that the phosphate of lime is indispensably necessary for the production of cells; we know that in a great many diseases the phosphates are excreted from the economy in very abundant quantities by the urine; and we know even that in these diseases the formation of cells is deficient. Shall we have any doubt that by substituting the quantity of phosphates exereted by the urine, or by removing the cause of their excretion itself, we must afford a great benefit to persons who are afflicted with the diseases alluded to.

There remains one difficult point, which I have to refer to. In the way which I relied upon in determining the quantities of phosphates in the urine, I precipitated the phosphate of magnesia, as well as the phosphate of lime. This having been shown microscopically and chemically, the question arose, whether the results which I spoke of with respect to the phosphate of lime would not require an amendment? It is true the proportions between the phosphate of lime and phosphate of magnesia are very different in different urines; however, I rarely observed the quantity of magnesia to exceed the quantity of lime; on the contrary, it was oftener found less. I therefore concede, without any hesitation, that the exact quantity of phosphate of lime could not be ascertained in the manner which I have adopted; but generally we shall not be far from the truth in supposing half the quantity of earthy phosphates present to consist of phosphate of lime, this being generally below and very rarely beyond the real quantity. I must repeat with respect to this point the above given remark, that I have only looked for approximate results, and that I believe them sufficient for the conclusions which I have drawn. All these

relations demand a very accurate revision; nor can I refrain observing that the proportions between phosphate of lime and phosphate of magnesia in different diseased persons are highly interesting, so much so as to recommend their most accurate study and exact analysis. In expressing this opinion, I refer, for instance, to a communication in the "Annales de Cihmie et de Physique, Juin, 1849, tom xxvi., 3e série," entitled "Recherches sur les Causes du Goître et du Cretinisme, par M. T. Grange," but I am compelled to waive the discussion for the present, it being rich enough in itself to form the subject of a special treatise.—*Lancet, April* 19, *June* 21, *and June* 28, 1851, *pp.* 434, 668, 699.

MEDICINE.

EPILEPSY AND INSANITY IN A LITTLE BOY; RECOVERY.

(Under the care of Dr. Babington.)

It is very natural that in our visits to the hospitals of this metropolis, our attention should be especially directed to the diseases whose nature is but imperfectly known, the cure of which is uncertain, and where the pathological manifestations are of a very changeable character. Epilepsy is of this number; and we have more than once had an opportunity of recording cases of this disorder which strongly illustrated some interesting point respecting its nature or treatment, or which tended to arrest attention upon phenomena not frequently observed. We alluded some time ago to the maniacal violence which sometimes accompanies the fits, it is now our intention to dwell for a few moments on a case wherein insanity was manifested, after epileptic seizures, in a very young subject.

It may safely be asserted, that with children epilepsy is more centric than eccentric, or, in other words, that it depends more on irritation conveyed to the brain from some portion of the body, as the liver or intestine, than from any derangement of the encephalon itself. It is not difficult to agree in this respect with the authors who have written on the disease; but when insanity occurs in a very young epileptic patient, we find existing theories insufficient; for it is generally held that the mental derangement is the consequence of repeated attacks through a series of years, that permanent congestion of the brain, and that fatuity, followed by complete aberration of mind, gradually sets in.

These gradual changes are thus described by Dr. Watson:—

"Doubtless, a single paroxysm does often leave the patient in a worse condition than that in which it found him; but this does not become perceptible to an ordinary observer until after the alteration has been rendered apparent by repeated fits and repeated small additions to the permanent injury. The friends of the patient remark that his memory is enfeebled in proportion to the number of the attacks; that his mental power and intelligence

decline. His features even assume, by degrees, a peculiar character, and too often he sinks into hopeless fatuity, or confirmed imbecility or insanity. It is this tendency which render epilepsy so sad and fearful a disease."

Being acquainted with these views, we were not a little astonished in seeing in Dr. Babington's wards, a little boy giving evident marks of insanity, and whose derangement was ascribed to epilepsy. It is well known that the latter complaint may attack patients of any age, but among the most common periods, Dr. Bright mentions seven or eight years, being the time of the second dentition; and this is just about the age of our little patient. But besides the irritation of the teeth, other sources of disturbance may also exist with young patients, as stones in the bladder, worms, &c., so that very careful inquiries respecting these circumstances should always be instituted when we are desired to prescribe for children suffering from epilepsy. The case under consideration runs as follows:—

Thomas C——, aged eight years, a remarkably handsome, stout, healthy-looking, and apparently intelligent child, was admitted into Job ward in March, 1851, under the care of Dr. Babington. He is one of four children, who are all in good health; the patient himself has hardly ever been ill, but his father states that about four months before admission the child suffered from a very severe attack of whooping-cough, and swelling of the cervical glands. He recovered, however, in a short time, and during his convalescence he had an epileptic fit while in bed. This fit commenced with violent screaming; he then jerked his legs up and down, lost his consciousness, &c. At first, he had but one or two attacks per night, and one in the day; but the frequency of these had gone on increasing, and just before his admission he had twenty or thirty fits in one night, but not more than four or five in the day. These numerous fits probably belonged to that class which has by the French been called "petit mal;" they had latterly, however, increased in severity, and were accompanied by twitching of the right side of the face.

When the patient was first taken by these fits, he was quite sensible after each attack; but as they increased in number and strength, he lost all power of reasoning, and his intellectual faculties gradually went astray. He occasionally complained of pain in his stomach, but this usually disappeared in a very short time. As the boy continued to get worse, he was brought to town, and during a space of six days, which he spent in London before entering the hospital, he had but very few fits, which circumstance would tend to imply that the change of scene and the journey had acted favorably on the nervous system.

On admission he was found a well-formed boy, with large development of head, especially on the posterior part; dark hair and eyes, and of a very handsome and interesting countenance. He is constantly jumping out of bed, eluding the nurse's watching, and runs up and down the ward. He is always in some mischief, ever talking concerning subjects unfit for his age, and using shocking language, which forms an unpleasant contrast with the regularity of

his features and the beaming intelligence of his looks. He is very quick at answering, and puts to the physician and those who accompany him the strangest questions, which he repeats with great rapidity, until attention is paid to them. All the functions are normally performed, and there is no evidence of the existence of calculus in the bladder or intestinal worms.

The boy was at first well purged with jalap and rhubarb, and Dr. Babington then commenced a tonic treatment by the agency of sulphate of zinc, the dose for the beginning being two grains three times a day in mint water. On the next day the nurse reported that he had four fits in the night, which she thus describes: He first sits up in bed, then gives utterance to a kind of bark, the legs and arms become rigid, and subsequently convulsed, and after about ten minutes' struggle he falls into a profound sleep.

The doses of sulpate of zinc were gradually increased up to six grains three times a day; the fits did, however, not vary much in number or intensity for several weeks, but after that period, the health being still very good, they gradually diminished, the propensity for talking and mischief became less, the intelligence cleared up, and about three months after admission there were no more fits, and the little patient left the hospital well in mind and body.

The subject of the preceding case did certainly not look scrofulous, (epilepsy has by some authors been coupled with the scrofulous diathesis,) nor could the convulsive affection be traced to heredity; we may, therefore, suppose that the patient's naturally very excitable nervous system had been somewhat affected by the severe attack of whooping-cough, soon after the disappearance of which the epileptic seizures had begun. The fact of alienation of mind having subsequently taken place in so young a patient is, however, difficult of explanation. The sulphate of zinc can of course not be regarded as a specific, but the success which accompanied its use in this case will serve as an additional proof that the mineral tonics act very favourably where any portion of the cerebro-spinal axis is suffering from debility or derangement.

SURGERY.

ULCERATED CANCER OF THE BREAST; TREATED BY DR. JAMES ARNOTT'S FREEZING PROCESS.

(Under the charge of Mr. SHAW.)

Our attention was attracted, a short time age, towards a patient in the cancer ward, who suffers from an ulcerated carcinoma of the breast. This poor woman is far advanced in age, but the breast was attacked only one year ago. The disease has, however, made such rapid progress, that the scirrhous tumour is now deeply ulcerated, and at times extremely painful. It appears that Dr. James Arnott's plan of producing insensibility, by freezing the part

with a mixture of ice and common salt, was tried in this case, in order to allay the agonizing pain which the poor woman was suffering. This trial was attended with very satisfactory results, and the patient was so much relieved by the proceeding, that she soon afterwards requested to have the ice applied again, and she expresses herself as very grateful for the temporary removal of the severe pain she experienced.

Dr. Tyler Smith likewise succeeded, some time ago, at St. Mary's Hospital, in relieving excruciating pain by the freezing mixture, in case of cancer of the uterus. It is plain, however, that the apparatus must be somewhat more complicated when the disease has attacked the organ. The fact that the pain accompanying the carcinoma of the womb was thus allayed, should certainly not be lost sight of.

Most of our readers probably know, that Dr. James Arnott advises equal quantities of ice and common salt to be mixed together, (the former being well pounded,) and then placed into a gauze bag, the margins of which are attached to a gutta-percha ring. By gently touching the part to be rendered insensible, with the bottom of the bag, for a minute or two, the surface becomes suddenly frozen, insensibility follows, and the pain of course disappears. To obviate the tingling sensation which is apt to ensue upon the return of sensibility, ice without salt is to be used, and thus no uneasiness whatever is experienced. We have seen portions of the human frame thus frozen, and always noticed that the insensibility became very great.

Dr. Arnott has proposed that his process should, in certain operations, take the place of chloroform; but it is plain that the insensibility can hardly be carried deep enough for the generality of operative purposes. Where, however, a thin stratum only is to be implicated, it might certainly be used with advantage. To relieve the pain of cancer, it seems, from the preceding case, and others which have been recorded, to deserve attention at the hands of those who have to prescribe the palliatives which are so indispensable in that melancholy affection.

MATERIA MEDICA.

Aperient, *Mild.*—The employment of the cortex of the rhamnus frangula, or alder buckthorn, has been recommended by Dr. Gumprecht, of Hamburgh, as a valuable and cheap substitute for some of the aperients now in use. "The fresh cortex is not to be used, as being uncertain or violent in its effects, that which has been kep, at least a year being preferable. If given in infusion it sometimes causes vomitingt and the decoction has been found the best and simplest way of preparing it, although the tincture and watery extract are very efficient preparations. The decoction may be prepared with ℥ss to ℥i. of the cortex to ℥xii. of water, boiled down to ℥vj., the strength depending upon the condition of the patient, duration of the disease, &c. So, too, the dose of a tablespoonful may be given every two or three hours, or two or three times a day, according to the state of the bowels and system in general.—*Med. Times, Nov.* 1, 1851, *p.* 469.

FORENSIC MEDICINE.

HORSES' AND HUMAN BLOOD.

At the inquest held upon Emma Styles, who was brutally and mysteriously murdered at St. John's Wood, Dr. Arthur Hill Hassall, who was appointed by the coroner to ascertain whether the stains upon the husband's clothes were those of human blood, stated that he closely examined with the microscope two of the stains upon the husband's shirt and trowers; and in order to arrive at an unerring and satisfactory conclusion, had scraped from a wall some horses' blood, and compared it with the blood-stains. Having detected a distinct and positive difference between the stains, he then examined the two stains upon the husband's clothes, and found that they were those of horses, and not of human blood. In answer to the coroner, he said he felt no hesitation in arriving at that conclusion. A verdict of "wilful murder against some person or persons unknown" was ultimately returned. The jury, in a written addendum to their verdict, declared the identity of the prisoner could not be proved, and that the ends of justice were defeated by the prisoner not having been brought before the coroner.

CHEMISTRY.

ON A NEW METHOD OF OBTAINING HIPPURIC ACID IN CONSIDERABLE QUANTITY WITHOUT EVAPORATION OF THE URINE.

The method described for obtaining hippuric acid, consists in adding to fresh cow's urine some hydrochloric acid, in the proportion of half a fluid ounce to a pint of urine. The hippuric acid being very slightly soluble in this acid liquor, is deposited together with some colouring matter, from which it is subsequently purified by dissolving it in water with excess of lime, adding animal charcoal, and heating the mixture for half an hour or more. On adding hydrochloric acid to the filtered liquor, and allowing the mixture to cool slowly, the hippuric acid is deposited in large prismatic crystals. It sometimes requires to be further purified by repeating this process. The acid on being thus prepared, on being analyzed, gave results agreeing with the established formula for hippuric acid, namely, $C_{18}\ H^8\ N\ O_5 + H\ O$.

ON THE COMPOUNDS OF COTTON WITH THE ALKALIES.

The author first described the process of Mr. Mercer, by which the beautiful fabrics made known to the public through the Great Exhibition, are produced. When cotton, or an article made of that material, is immersed in strong caustic soda in the cold, a certain combination is effected—which is again destroyed by pure water; but the "Mercerized" cotton thus produced is permanently contracted, and rendered more susceptible of dyes. This was illustrated by a number of specimens, much shrunk, so that they assumed an appearance of extraordinary fineness, others

puckered in patterns by partial "Mercerization," and others again printed with colours which surpassed in depth and brilliancy those produced by the same means on the calico in its original state. Dr. Gladstone proceeded to detail experiments by which he had succeeded in obtaining the compound of cotton and soda free from adhering alkali, through the agency of strong, sometimes absolute alcohol. He found that the proportion of soda which combined with the lignine varied with the strength of the solution employed, but under no circumstances exceeded one atom, the formula of the "sodaed" cotton, being C_{24} H_{20} O_{20}, Na O. There was a varying amount of combined water. Some properties of this compound were discussed, and the author then proceeded to state his conviction that there was no sufficient ground for viewing the "Mercerized" cotton as chemically different from the original lignine It is identical in composition, and the change of properties may be accounted for by the change in its physical condition. When viewed under the microscope, the fibres in their ordinary condition appear as flattened twisted ribands; but the moment they are touched by the alkaline ley they untwist themselves, contract in length, and swell out, assuming a rounded solid form; and this circular appearance they retain after the soda is removed by water. This not only explains the shrinking, but the cause of a larger quantity of dye being absorbed, as the substance of the fibre itself is porous. Potash has a similar action to that of soda, giving rise to a compound, the formula for which is C_{24} H_{20} O_{20}, K O.

SURGERY.

INJURY TO THE PELVIS, BLADDER, AND URETHRA; DEATH; AUTOPSY.

(Under the charge of Mr. Fergusson.)

Among the numerous kinds of injury which come before the hospital surgeon, there are few which present more danger than lesions about the abdomen or pelvis. Such cases, when the accident is severe, almost always terminate fatally; and the line of treatment must necessarily be surrounded with some uncertainty, as it is often extremely difficult to distinguish the actual nature of the lesion which the patient has suffered. Injuries of the urethra are generally followed by obstinate stricture; of this we have seen several examples, the latest being a boy, under the care of Mr. Coulson, at St. Mary's Hospital, who was for several years the subject of stricture and occasional retention, this state of things being the result of a laceration of the uretha. The boy has finally died of chorea, and we shall probably at no distant period offer a detailed report of the case.

But when the bladder is either contused or ruptured, matters proceed at a more rapid rate, and death soon ensues; but there is a great difference in the number of days during which patients live, after the occurrence of a rent in the bladder and extravasation of urine in the abdomen. Some die in a few hours, and others have been known to survive ten days, a fortnight or more. We shall just adduce some of the cases which have of late come to our cognizance. In the first, the injury was of a very serious character. The facts are these :—

William P——, a carman, about thirty years of age, was brought into the hospital, Dec. 24, 1851, having been run over two hours previously. It appears that while driving his cart through a narrow road, the patient found himself wedged between the wall and the vehicle, the horses having taken fright. The poor man had not time to rescue himself, but was knocked down, the wheel (the tire of which was six inches wide) passing between his legs, along the perinæum, to the upper part of the right thigh, and by a sudden turn crossing over the abdomen. At the time of the accident, the bladder seems to have been nearly empty, as the patient had passed urine an hour before.

On his admission, he was very low, and complained of great pain over the region of the bladder, and in the loins, especially on the left side, the course of the wheel being distinctly marked by strong ecchymosis. The patient was immediately placed into a warm bath; and as he had not passed any urine since the accident, an attempt was made to introduce the catheter. The uretha was found much lacerated, and the catheter seemed to deviate from the straight course just before it arrived at the triangular ligament. With the finger passed into the rectum, the point of the instrument could be felt gliding between the gut and the bladder. Mr. Davis, the house-surgeon, finding his efforts fruitless, sent for Mr. Ferguson, at 11 o'clock, P M.

After having carefully examined the patient, Mr. Fergusson endeavoured for a short time to introduce the instrument, but without success. He gave it at the same time as his opinion, that there was but little, if any, urine in the bladder, and that the right ramus of the ischium was broken at its junction with the pubis. Ordered fomentations.

On the next day, there was not much change, and the patient did not seem to suffer much pain, except over the immediate vicinity of the bladder, which viscus did not appear to be distended; the tongue was moist, the pulse quick and feeble. Calomel, eight grains; opium, one grain—to be taken at once. Another attempt was made to pass the instrument, but without success.

On the third day, the patient was found to have had a very bad night; he complained of severe pain over the bladder, and felt a great inclination to pass urine. It was thought that he might perhaps succeed in the warm bath, but he obtained no relief from it; nor were further attempts with the instrument successful. The abdomen now became tympanitic, but the pain remained located in the region of the bladder.

In the afternoon, as the patient was in much pain, Mr. Fergusson was again sent for, and the catheter tried, but without success; and Mr. Fergusson stated that the bladder was not distended, for he had found that on passing his finger into the rectum, he could feel no fulness about the bladder, the latter seeming free and capacious. Extravasation of urine was now suspected. Two incisions were made on the obdomen, and another in the left groin; but no urinous fluid escaped. The man continued in this state until about half-past two, A. M., on the fifth day, when the pain became excessive, and a sudden change took place. The nurse called up the house-surgeon; but before the latter reached the ward, the patient was dead.

The post-mortem examination revealed the following lesions:—The intestines were slightly, if at all, inflamed, but the true pelvis was filled with urine, so that when the viscera were pressed downwards, the fluid welled up considerably. When

the opaque straw-coloured liquid had been taken out, no marks of peritonitis came into view. The bladder was now carefully examined. It was quite empty and collapsed, and on its posterior portion a ragged opening was observed, which might have admitted the index finger. The symphysis pubis was seprated for the space of about one inch, and the ramus of the pubis fractured at its junction with that of the ischium. There was likewise a fracture of the ilium running into the acetabulum, and the sarcum was broken and separated from the bone. The urethra had suffered an extensive laceration in front of the membranous portion; from this latter fact it was now clear that the instrument, during the attempts at catheterism, had passed into the perinæum.

ON THE IODIDE OF POTASSIUM IN SYPHILIS.

[The following remarks upon this subject are made by the Reviewer in the "British and Foreign Medico-Chirurgical Review."]

Dr. Williams was the real discoverer of this influence, perhaps the greatest therapeutical discovery of the age, after that of the anæsthetic effects of ether and chloroform. His paper was read at the College of Physicians in 1834, five years before Ricord began his experiments; and so far from giving it indiscriminately in all cases, he took the greater pains to investigate its real powers, and pointed out where it was efficacious and where useless; not with hesitation, but with all the open candour of his nature. In his "Elements of Medicine," while showing the marvellous certainty of its action in rupia and the hard periosteal node, he showed that its power was much less in roseola, purpura, and ecthyma, but still it was better than mercury; while in lichen, lepra, psoriasis, and iritis, he proved with equal clearness, that mercury, either locally or generally, had more beneficial influence than the iodide. He pointed out the curious fact, that while the action of the iodide on *hard* periosteal node was as certain and evident as that of quinine in ague, when once suppuration had commenced, sarsaparilla was the remedy, the iodide being useless. In soft node and prurigo, he showed the true power of sarsaparilla; and in syphilitic angina and rupia, the invariably good effects of combining local mercurial applications with the internal administration of the iodide.

We witnessed many of his experiments, and for the last twelve years have been guided by his results, without ever having had cause to regret it; and after tolerably extensive opportunities of treating secondary symptoms, the only modification we have learnt to make in his practice, is the occasional use of the protoiodide of mercury in lichen and in some of the affections of ligaments and synovial membranes. We almost always give the dose recommended by Dr. Williams, eight grains three times a day in water or camphor mixture; and when using the protoiodide of mercury, begin with one grain daily in divided doses, increasing gradually to three or four grains in the day, made into pills with liquorice, or with catechu, if it acts on the bowels. Opium appears to destroy its power altogether. We never saw any good done by giving a mercurial course before the iodide, as many recommend, but often much harm. On this point and on the relative powers of iodide of potassium and mercury in syphilis, we would refer to a work in which the investigation has been made in the true spirit of science by Dr. Hassing, of Copenhagen. A notice of this book, and an abstract of some of the important results, will be found in Vol. XX., 1845, pp. 482–6.—*Brit. and For. Medico-Chirurg. Review, July*, 1851, *p.* 201.